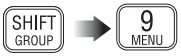
8 MENU MODE

Menu mode is used to adjust the various settings of the radio, such as channels inhibited from scan functions, MMSI number programming and User channel selection.



To enter Menu mode, press **SHIFT** followed by **9** (**MENU**).

Use the **VOL** ▲ and **VOL** ▼ keys to scroll through the menu options below:

- **Scanning** (section 8.1) – Options related to the various scanning functions such as channel inhibit, memory scan select and scan dwell time.
- **Numbers** (section 8.2) – Entering of ID numbers such as MMSI, Group MMSI and ATIS numbers (if applicable in country of use).
- **VHF Items** (section 8.3) – Miscellaneous options such as selection of User channel, last used channel, interrupt intercom, speaker settings and SimNet management.

To select an option, press **OK**. To return to normal radio operation, press **ON/C**.

NOTE

Entering Menu mode will inhibit the operation of the radio. Exit Menu mode before returning the handset to the cradle to permit normal operation.

8.1 Scanning

Once the Scanning menu option has been selected (see introduction to section 8), use the **VOL** ▲ and **VOL** ▼ keys to scroll through the menu options below:

- All scan inhibit (section 8.1.1)
- All scan reset (section 8.1.2)
- All scan show (section 8.1.3)
- Memory scan select (section 8.1.4)
- Memory scan clear (section 8.1.5)
- Memory scan show (section 8.1.6)
- Scan dwell time (section 8.1.7)

To select an option, press **OK**. To return to the main menu, press **ON/C**.

8.1.1 All scan inhibit

If the radio is repeatedly locking onto a busy channel when scanning, this channel can be inhibited, i.e. excluded from the scan cycle.

OK

OK

From the Scanning menu select "ALL SCAN INHIBIT" and press **OK**. Enter the relevant channel number using the numeric keypad. The display will show the channel number and its current status – "ALL SCAN" for enabled, or "ALL SCAN INHIBITED" for excluded channels (Fig 8.1). Use the **OK** key to change the channel's status.

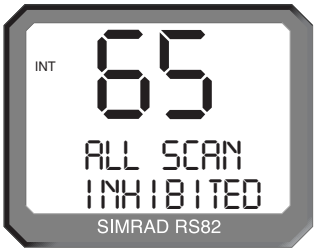


Fig 8.1 - Selected channel inhibited from scan

ON/C

Repeat the above procedure to enable or inhibit further channels, or use the **VOL ▲** and **VOL ▼** keys to select another menu option. To exit this menu level, press **ON/C**.

8.1.2 All scan reset

OK

To reset all inhibited channels select "ALL SCAN RESET" from the Scanning menu and press **OK**. The display will show "CHANNELS RESET" (Fig 8.2).

Fig 8.2 - All inhibited channels reset

ON/C

Use the **VOL ▲** and **VOL ▼** keys to select another option, or **ON/C** to return to the upper menu level.

8.1.3 All scan show

OK

This function will display all inhibited channels. From the Scanning menu select "ALL SCAN SHOW" and press **OK**. The display will change to "SHOWING CHANNELS" and display all inhibited channels in sequence.

ON/C

Press the **VOL ▲** and **VOL ▼** keys to select a further option, or **ON/C** to return to the main menu.

8.1.4 Memory scan select

This function selects the channels to be used in the Memory scan cycle (see section 7.9).

OK

From the Scanning menu choose “MEM SCAN SELECT” and press **OK**. Enter the relevant channel number using the numeric keypad. The display will show the channel number and its memory status – “MEM SCAN” if it is not currently selected for memory scan, or “MEM SCAN ENABLED” if it is already selected (Fig 8.3).

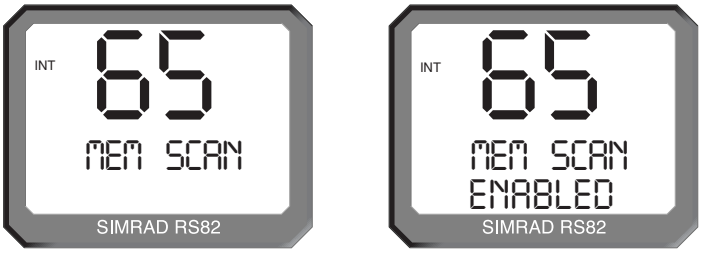


Fig 8.3 - Selecting channel for Memory scan

OK

Use the **OK** key, to change the channel’s status – i.e. if it is not selected, pressing **OK** will add it to the Memory scan cycle and vice versa.

ON/C

Repeat the above procedure to select or deselect further channels. When finished, press **ON/C** to return to the main menu, or use the **VOL** ▲ and **VOL** ▼ keys to select another menu option.

NOTE

North American users – Only one Weather channel can be stored in the memory scan; if another one is selected, it will override the existing channel. The Weather channel is not scanned as part of the memory scan sequence, it is in fact used by the Weather Watch function (see section 11.1).

8.1.5 Memory scan clear

Memory scan clear will remove all previously selected channels. To clear all channels select “MEM SCAN CLEAR” from the Scanning menu, then press **OK** – the display will change to show “CHANNELS CLEARED” (Fig 8.4).

OK

Fig 8.4 - Clearing all previously selected channels

ON/C

Press the **VOL** ▲ and **VOL** ▼ keys to select another Scanning menu option, or press **ON/C** to return to the main menu.

8.1.6 Memory scan show

This function displays all channels selected for Memory scan. From the Scanning menu select "MEMORY SCAN SHOW" and press **OK**. The display will change to "SHOWING CHANNELS" and display all enabled channels in sequence.

Press the **VOL ▼** or **VOL ▲** key to select another Scanning menu option, or **ON/C** to return to the main menu.

8.1.7 Scan dwell time

This function is used to select the amount of time the RS82 remains on a channel, after it has locked onto it during a scanning function (All scan or Memory scan) and the signal is lost.

From the Scanning menu (section 8.1) select "SCAN DWELL TIME XX" (where "XX" denotes the current dwell time in seconds), then press **OK** (Fig 8.5).

Fig 8.5 - Scan dwell time

The default time is "0", meaning that the scan will continue as soon as the signal is lost. There are 11 levels from 0–10 seconds. Use the numeric keys to enter the scan dwell time and press **OK** to select – the display will show "DWELL TIME XX SECONDS".

Press the **VOL ▲** or **VOL ▼** key to select another Scanning menu option, or **ON/C** to return to the main menu.

8.2 Numbers

The Numbers menu is used for entering ID numbers such as MMSI, Group MMSI and ATIS (if applicable in country of use).

Once the Numbers menu option has been selected (see introduction to section 8), the **VOL ▲** and **VOL ▼** keys to scroll through the menu options below:

- Ship's MMSI (section 8.2.1)
- Group MMSI (section 8.2.2)
- ATIS number (section 8.2.3)

NOTE The ATIS number option will only be shown if the radio is ATIS enabled. This feature is only available for sets used in the Benelux and Rhine/Danube waterways.

To return to the main menu, press **ON/C**.

8.2.1 Ship's MMSI

This function will display the boat's MMSI (*Maritime Mobile Service Identity*) number, provided it has already been entered, or allow the MMSI to be entered if the radio is being used for the first time (cf. section 1.3).

CAUTION

The MMSI number can only be entered once and cannot be edited by the user. Should it become necessary to change the MMSI number (for example, if the radio is being moved to another boat), the radio must be sent to an authorised Simrad service agent for reprogramming.

From the Numbers menu (section 8.2) select "SHIPS MMSI" and press **OK** – the display will show the MMSI number, unless the number has not been entered yet, in which case it will show dashes only (Fig 8.6). To enter the MMSI number, press **OK** again. The display will show "ENTER MMSI" and the first dash will start flashing to indicate that entry can begin.

Fig 8.6 - Entering the MMSI number

Enter the nine-digit MMSI number using the numeric keypad and press **OK**. The radio will then ask the MMSI number be re-entered ("CONFIRM"). If the two numbers do not match, the procedure must be repeated.

Use the **CALL** ◄ and ► **MSG** keys to move the cursor to correct any errors. The cursor position is indicated by the flashing number. Enter a new number to overwrite an incorrect number.

NOTE

The MMSI number will not be accepted, unless all nine digits have been entered.

Press **ON/C** to return to the main menu.

8.2.2 Group MMSI

For boats that are part of a flotilla, racing/fishing fleet or other group, a Group ID MMSI (*Maritime Mobile Services Identity*) number can also be entered and used to contact other boats in the same fleet (see also section 1.4).

NOTE

The Group MMSI number may be allocated on a temporary basis by the local administration, for this reason the number can be changed by the user.

From the Numbers menu (section 8.2) select “GROUP MMSI” and press **OK** – the display will show the Group MMSI, unless the number has not been entered yet (in which case it will show “_ _ _”). To enter the Group MMSI number press **OK** again. The display will change to show “ENTER MMSI” and the first dash in the number will start flashing to indicate that entry can begin.

The first digit of a Group MMSI number is always “0” and this is pre-selected by the radio. Enter the remaining eight digits using the numeric keypad and press **OK** (Fig 8.7).

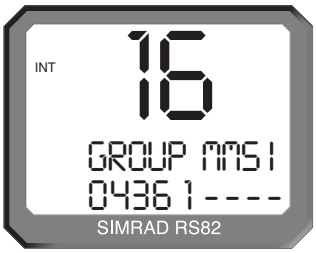


Fig 8.7 - Entering a Group MMSI number

Use the **CALL** ◄ and ► **MSG** keys to correct any errors. The cursor position is indicated by the flashing number. Enter a new number to overwrite an incorrect number.

NOTE

The number will not be accepted unless all eight remaining digits have been entered.

Press **ON/C** to return to the main menu.

8.2.3 ATIS number

NOTE

This section applies only to radios used in countries where the ATIS system is in operation (i.e. Benelux and the Rhine/Danube waterways). This option will only appear on ATIS-equipped radios. (Please refer to section 1.5 also.)

CAUTION

The ATIS number can only be entered once and cannot be edited by the user. If it is necessary to change the ATIS number, the radio must be sent to an authorised Simrad service agent for reprogramming.

From the Numbers menu (section 8.2) select “ATIS NO”; the display will show the ATIS number, unless the number has not been entered yet (in which case it will show “_ _ _”).

To enter the ATIS number press **OK** again. The display will now show "ENTER ATIS" and the first dash in the number will start flashing to indicate that entry can begin.

Enter the nine-digit ATIS number using the numeric keypad and press **OK**. The radio will then ask the number be re-entered ("CONFIRM"). If the two numbers do not match, the procedure must be repeated.

Use the **CALL** ◄ and ► **MSG** keys to move the cursor to correct any errors. The cursor position is indicated by the flashing number. Enter a new number to overwrite an incorrect number.

NOTE

The ATIS number will not be accepted, unless all nine digits have been entered - the prefix "9" is automatically inserted by the radio.

Press **ON/C** to return to the main menu.

8.3 VHF Items

The VHF Items menu contains the settings for miscellaneous functions such as User channel, position view, speaker settings, as well as SimNet management and lighting modes.

Once the VHF Items menu option has been selected (see introduction to section 8), use the **VOL** ▲ and **VOL** ▼ keys to scroll through the available menu options:

- User channel (section 8.3.1)
- Position view (section 8.3.2)
- Last used channel (section 8.3.3)
- Interrupt intercom (section 8.3.4)
- Speaker settings (section 8.3.5)
- SimNet management (section 8.3.6)
- Lighting modes (section 8.3.7)

To select an option press **OK**. To return to the main menu press **ON/C**.

8.3.1 User channel

This is a user-programmable priority channel that is used in the Tri-Watch function and can be selected by pressing the **USER** key.

From the VHF Items menu (section 8.3) select "USER CHANNEL" and press **OK**. Using the numeric keypad enter the requi-

site channel number and press **OK**. The display will show "SET USER CHANNEL" (Fig 8.8).

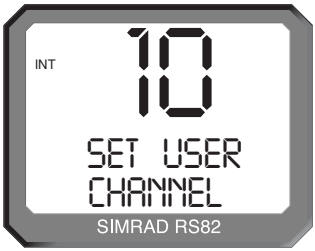


Fig 8.8 - Setting the User channel

Use the **VOL ▲** and **VOL ▼** keys to select another option, or press **ON/C** to return to the main menu.

8.3.2 Position view

This option allows the user to view the current GPS position that will be used if a distress call is made (Fig 8.9). The function of this option depends on whether the position is received automatically via NMEA, or has been entered manually.

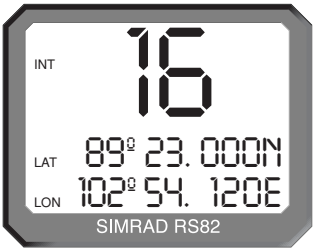


Fig 8.9 - Position display

From the VHF Items menu (section 8.3) select "POSITION VIEW" and press **OK**. If GPS position information is being received, the display will show "POSITION VIEW OFF". Use the **OK** key to toggle between "ON" and "OFF".

When this option is turned on, the bottom two lines of the display will show the current "LAT/LON" positions on all handsets. If the volume or squelch is being adjusted, the display will show the settings while the **VOL ▲** / **VOL ▼** keys are operated, before reverting to the position display.

If no GPS position information is being received, the display will show "VIEW". Pressing **OK** will show the position entered manually, or the last known GPS position. If no position has been entered, the "LAT/LON" display will show "9 9 9" only.

Use the **VOL ▲** and **VOL ▼** keys to toggle between position and time (UTC) displays.

Press **ON/C** to exit, or use the **VOL ▲** and **VOL ▼** keys to choose another option.

8.3.3 Last used channel

Normally the RS82 will power up on the pre-programmed start-up channel (usually the priority channel). This function enables the radio to power up on the last-used channel – the default setting is "OFF".

From the VHF Items menu (section 8.3) select "LAST USED CHAN" and press **OK** – the current status will be displayed ("ON"/"OFF"). Use the **OK** key to toggle between the settings.

Press the **VOL ▲** and **VOL ▼** key to select another option, or **ON/C** to return to the main menu.

8.3.4 Interrupt intercom

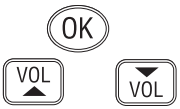
This function can be used to specify whether intercom functions should be interrupted when an incoming VHF transmission is received – the default setting is "Y" ("Yes").

From the VHF Items menu (section 8.3) select "INTERRUPT INTERCOM" and press **OK** – the display will show the current status ("Y" or "N"). Use the **OK** key to toggle between settings.

Use the **VOL ▲** and **VOL ▼** keys to select another option, or **ON/C** to return to the main menu.

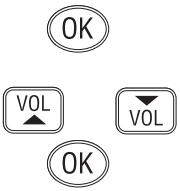
8.3.5 Speaker settings

The speaker settings option is used to set individual default volume levels for each station or intercom in the system.



From the VHF Items menu (section 8.3) select "SPEAKER SETTINGS" and press **OK** to enter the sub-menu. Use the **VOL ▲** and **VOL ▼** keys to scroll through each speaker, displaying the default volume level for each one.

NOTE Only connected speakers will be shown.



The first option in the sub-menu is "RESET TO DEFAULTS" (Fig 8.10, p. 61) – pressing **OK** will reset all speaker levels to their default settings, the display will show "RESETTING LEVELS". To set the required volume levels for each individual position, use the **VOL ▲** and **VOL ▼** keys to select the required station and press **OK**.

The selected speaker will emit a continuous tone indicating the current volume level. Press **VOL ▲** and **VOL ▼** to adjust the volume level as desired and press **OK** to confirm.

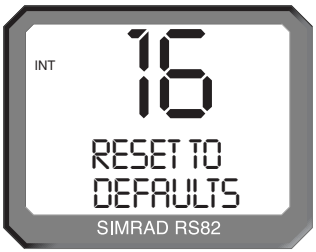


Fig 8.10 - Resetting speaker settings to defaults

VOL ▲ VOL ▼ ON/C

Press the **VOL ▲** and **VOL ▼** keys to select another station and repeat the above procedure, or **ON/C** to return to the upper menu levels.

8.3.6 SimNet management

NOTE This option will only appear in the VHF Items menu, if the radio is operating on a SimNet bus.

OK

From the VHF Items menu select "SIMNET MANAGEMENT" and press **OK** (Fig 8.11).

Fig 8.11 - SimNet management page

VOL ▲ VOL ▼

Use the **VOL ▲** and **VOL ▼** keys to scroll through the available menus -

- **Data sources** (section 8.3.6.1)
- **Lighting banks** (section 8.3.6.2)
- **Device instance** (section 8.3.6.3)
- **System instance** (section 8.3.6.4)

OK

To select an option, press **OK**.

ON/C

To return to the VHF Items menu, press **ON/C**.

8.3.6.1 Data sources

This function is used to select the data source for position, date and time information, if the RS82 is part of a SimNet system with more than one unit providing nav data (Fig 8.12). It will only be shown if SimNet is present.

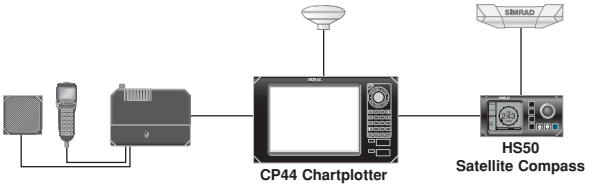


Fig 8.12 - Example of multiple data sources on one SimNet system

As a default, the RS82 will give priority to SimNet data over that received via the NMEA input. This function enables you to select the NMEA input as the priority data source.

From the SimNet management menu select "DATA SOURCES" and press **OK**.

Use the **VOL ▲** and **VOL ▼** keys to scroll through the following options -

Simrad Group – (Default) Accept the data source aspecified by the Group Owner. A Group Owner is a unit capable of dictating which data source other SimNet units on the bus use. The Group Owner is usually a Chartplotter or similar unit.

NMEA0183 – This option will select the NMEA0183 input as the nav data source.

SimNet units – The display will show the name and serial number of each SimNet unit detected on the network.

Third Party units – The display will show the name and serial number of any third party units connected to the bus via NMEA2000.

NOTE

Apart from NMEA0183, a maximum of four other sources will be shown, and these will be the first four detected. Any further sources apart from these will be ignored.

Press **OK** to set the selected data source. The display will show "SOURCE SELECTED", then exit to the SimNet management menu.

NOTE

If the selected data source is lost, the radio will automatically select another SimNet or NMEA source if available, otherwise the display will show "SOURCE DATA LOST".

8.3.6.2 Lighting banks

This function allows individual RS80 stations to be assigned to different lighting banks across the SimNet bus. It enables groups of SimNet products to be set up as "zones", which share the same backlight settings. This is useful on vessels with, for example, an interior and an exterior steering position, where the ambient lighting (and therefore backlighting requirement) is different (Fig 8.13).

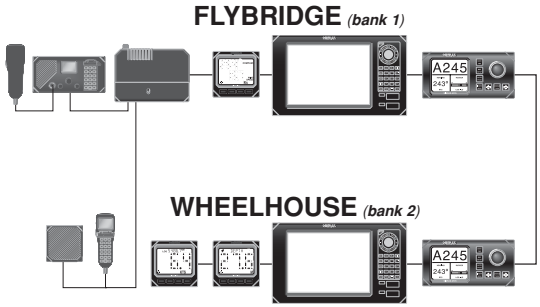


Fig 8.13 - Example of vessel with two lighting banks

Thus, on a flybridge cruiser all the equipment fitted on the flybridge can be assigned to lighting bank 1 and the equipment in the wheelhouse can be assigned to lighting bank 2.
Adjusting the lighting on one unit in bank 1 will be duplicated on all other products in the same bank, but will not affect any units in bank 2.

From the SimNet management menu select "LIGHTING BANKS" and press **OK**.

Use the **VOL ▲** and **VOL ▼** keys to select the station you want to assign to a particular lighting bank.

Use the numeric keypad to enter the bank number (0–63).

Press **OK** to confirm.

Repeat the above sequence for each station fitted to the RS82.

Press **ON/C** to exit to the SimNet management menu.

NOTE

All IS12 instruments are set to "BANK 0" by default. It is not possible to split IS12 displays into separate banks.

8.3.6.3 Device instance

This option will normally only be used on very large, complicated systems, where there is more than one RS80 system on the same SimNet bus. For example, on certain vessels it may be necessary to have more than one VHF radio fitted with different channel configurations (Fig 8.14).

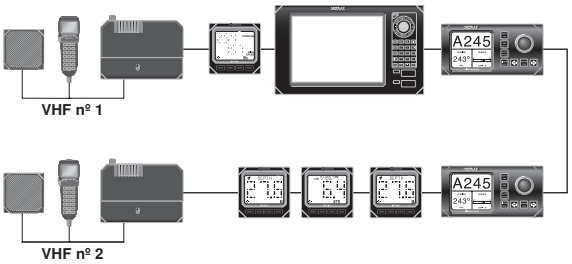


Fig 8.14 - Multiple RS80 VHFs on the same network

To prevent conflict across the network, these can each be assigned a unique device number.

NOTE

"More than one RS80 system" refers to a complete system radio, including the Rx/Tx transceiver, NOT to a single RS80 with multiple stations – that is still classed as one radio.

From the SimNet management menu select "DEVICE INSTANCE" and press **OK**.

The default device instance number is "000". Use the numeric keypad to enter the required device instance number and press **OK** to confirm (Fig 8.15).

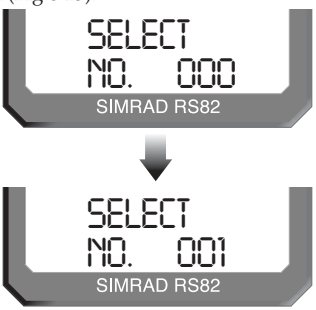


Fig 8.15 - Entering a device number

The display will show "SELECTED" and the entered device number for 2 seconds, then exit to the SimNet management menu.

8.3.6.4 System instance

A SimNet bus can have a maximum of 50 devices (or "nodes") attached to it. If a large vessel has a requirement for more than 50 nodes, then a multiple network system is required.

The system instance allows the user to allocate a unique number to each network, which allows the multiple networks to intercommunicate.

NOTE

If your vessel is large enough that it is likely to require setting up multiple networks, it is strongly advised that you contact Simrad Technical Support to discuss your particular system requirements before proceeding further.

From the SimNet management menu select "SYSTEM INSTANCE" and press **OK**.

The default system instance number is "00". Use the numeric keypad to enter the required system instance number and press **OK** to confirm (Fig 8.16).

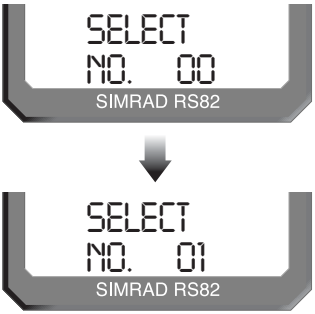


Fig 8.16 - Entering a system instance number

The display will show "SELECTED" and the entered system number for 2 seconds, then exit to the SimNet management menu.

8.3.7 Lighting modes

This option is used to select how the backlighting is controlled on the RS82. Backlighting control can either be limited to the individual station, to the whole RS80 system, or across the SimNet bus.

From the VHF Items menu select "LIGHTING MODES" and press **Ok**.

Use the **Vol ▲** and **Vol ▼** keys to scroll through the options (Fig 8.17) -

Station	All stations are independent.
Radio	All stations will respond to a common level.
Network	All stations respond to the network level (for the specified lighting bank).

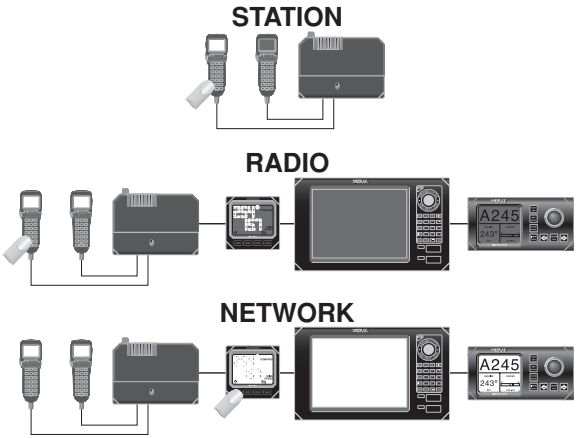


Fig 8.17 - Lighting modes

Press **Ok** to set the selected lighting mode. The display will show the lighting mode selected, then exit to the VHF Items menu.

NOTE This option is station specific. It will be necessary to duplicate these settings to any other RS80 stations for them all to behave in the same manner.

9 DSC FUNCTIONS

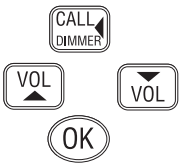
9.1 General

The RS82 features full Class D DSC (*Digital Selective Calling*) functionality enabling the user to make digitally selected calls, which are quicker and simpler to make than traditional voice calls using channel 16. Should a distress situation occur, a Distress Alert call can be initiated, indicating the vessel's identity, position and automatically establish distress communication on the emergency voice channel (normally channel 16).

NOTE DSC functions will only be available, if the MMSI number has been entered into the radio (see section 8.2.1).

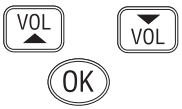
9.2 Making a call

9.2.1 Individual routine call



Press the **CALL** ◄ key to enter the individual routine call function. Enter the MMSI number of the station manually using the numeric keypad, or use the **VOL** ▲ and **VOL** ▼ keys to scroll through the MMSI number directory (Fig 9.1). Press **OK** to confirm the selected entry.

Fig 9.1 - Selecting a number from the MMSI directory



Next enter the required reply channel using the numeric keypad, or use the **VOL** ▲ and **VOL** ▼ keys to scroll through the four default reply channels (06, 08, 72 & 77). Press **OK** to confirm.

NOTE Only simplex channels can be selected as working channels.

NOTE If the MMSI number entered is for a coast station, the option to select a working channel will not be available – this is specified by the coast station, and will normally be a duplex channel.

The display will show "PRESS OK TO SEND" – press **OK** to initiate the call, or **ON/C** to abort.

On initiation of the call, the display will show "AWAITING ACKNOWLEDG" (Fig 9.2). Once an acknowledgement is received, the radio will switch to the specified working channel.

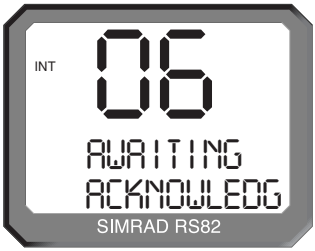


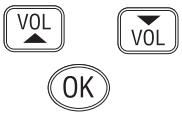
Fig 9.2 - Call sent, awaiting acknowledgement from recipient

NOTE If an acknowledgement is not received, the radio will continue showing "AWAITING ACKNOWLEDG" for 4.5 minutes before timing out and returning to normal operation.

9.2.2 Public correspondence call

For vessels within range of a country operating the necessary network, the RS82 can be used to directly make and receive public correspondence calls from a land-based telephone system via a coast station. Press **SHIFT**, then **ON/C** to enter the public correspondence call function.

Enter the telephone number manually using the numeric keypad (Fig 9.3), or use the **VOL** ▲ and **VOL** ▼ keys to scroll through the telephone number directory. Press **OK** to confirm the selected entry.



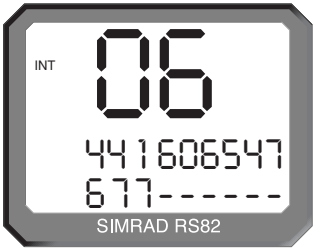
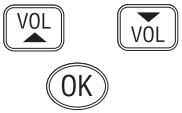


Fig 9.3 - Dialling a number manually

NOTE Check with your local network provider for usage instructions.



The next stage is to specify the coast station the call is to be routed through. Either manually enter the MMSI number of the coast station using the numeric keypad, or use the **VOL ▲** and **VOL ▼** keys to scroll through the Coast Station MMSI directory (Fig 9.4). Press **OK** to confirm the selected entry.

Fig 9.4 - Selecting a coast station from the Coast Station directory

NOTE

The MMSI number entered must have a "00"-prefix (which indicates a coast station), or it will not be accepted.

The display will show "PRESS OK TO SEND" – press **OK** to initiate the call, or **ON/C** to abort. On initiation of the call, the display will show "ATTEMPTING TO CONNECT". If the call cannot be connected for any reason, the display will show "CANNOT CONNECT", then "PLS WAIT 15 MINUTES" before returning to the default display.

If the call is connected, the display will show "CALL IN PROGRESS" (Fig 9.5) – press the **PTT** key to talk and release to listen.

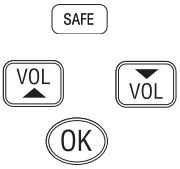
Fig 9.5 - Call has been connected

NOTE

The channel number displayed during the call is determined by the coast station.

Press **ON/C** to end the call, or wait for the other participant to replace the receiver.

9.2.3 All Ships Safety call



To make an All Ships Safety call, lift the protective cover on the front of the handset and press the **SAFETY** key. The display will show "SAFETY ON CH 16" (Fig 9.6). Enter the required working channel using the numeric keypad, or use the **VOL** ▲ and **VOL** ▼ keys to scroll through the four default reply channels (06, 08, 72 & 77). Press **OK** to confirm.

Fig 9.6 - Making an All Ships Safety call

NOTE Only simplex channels can be selected as working channels.

The display will show "PRESS OK TO SEND" – press **OK** to initiate the call, or **ON/C** to abort.

9.2.4 All Ships Urgency call

To make an All Ships Urgency call, lift the protective cover on the front of the handset and press the **URGENCY** key. The display will show "URGENCY ON CH 16" (Fig 9.7).

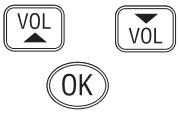
Fig 9.7 - Making an All Ships Urgency call

NOTE All Ships Urgency calls must use channel 16 for voice communication, the option to manually select a working channel is not available.

The display will show "PRESS OK TO SEND" – press **OK** to initiate the call, or **ON/C** to abort.

9.2.5 Group call

Press the **SHIFT** key twice to enter the group call function – the display will show the Group ID MMSI number stored in the radio (see also section 8.2.2).



Enter the required working channel using the numeric keypad, or use the **VOL** ▲ and **VOL** ▼ keys to scroll through the four default reply channels (06, 08, 72 & 77). Press **OK** to confirm (Fig 9.8).

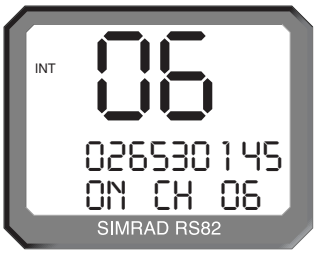


Fig 9.8 - Making a group call

NOTE

Only simplex channels can be selected as working channels.

When the display changes to show "PRESS OK TO SEND" – press **OK** to initiate the call, or **ON/C** to abort.

9.2.6 Distress Alert call

WARNING

This call should only be made if the vessel is in a genuine distress situation. It is an offence to send a Distress Alert call if the vessel or crew are not in danger.

The distress button is located under the protective cover on the front of the handset. Press the **DISTRESS** button to access the Distress Alert call function – the display will show "DISTRESS UNDEFINED" (Fig 9.9).

Fig 9.9 - Distress Alert menu

VOL VOL

Use the **VOL** ▲ and **VOL** ▼ keys to scroll through the available *Nature of Distress* categories:

- Undefined (default)
- Abandoning
- Piracy
- MOB
- Fire
- Flooding
- Collision
- Grounding
- Listing
- Sinking
- Adrift

DIST

Press and hold the **DISTRESS** key to begin the 5-second countdown – the large digits will count down from 5 to 1 before initiating the Distress Alert, then the display will change to show "SENDING ALERT" (Fig 9.10).

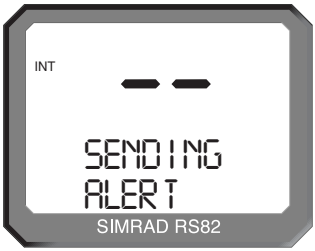


Fig 9.10 - Sending a Distress Alert

NOTE

ON/C

The Distress Alert call can be aborted, if the **DISTRESS** key is released at any time before the 5-second countdown has ended. Press **ON/C** to return to normal radio operation.

The Distress Alert call sent includes the vessel's MMSI number, the nature of the distress as specified, the time the call was sent and the current position of the vessel (if the appropriate navigational receiver is connected to the radio, or a manual position has been entered; see section 11.3).

The radio will switch to monitoring channel 16 and the display will show "AWAITING ACKNOWLEDG" until an acknowledgement is received. The radio will automatically repeat the alert approximately every four minutes, until either an acknowledgement is received, or **ON/C** is pressed (*it is not recommended that the Distress Alert is cancelled manually by pressing ON/C, unless you are requested to do so by the rescue authorities*).

When an acknowledgement is received from the Rescue Co-ordination Centre, this will automatically cancel the Distress Alert transmission. The subsequent rescue co-ordination will be performed using the voice channel (Ch 16).

WARNING **If a DSC distress alert is sent accidentally, cancel it immediately on the RS82 by pressing the ON/C button to prevent repeats, then make the following announcement on Ch 16:**

"This is (*name of vessel, call sign, MMSI*)"
"Cancel DSC Alert sent (*date & time/UTC*)"

DO NOT simply cancel the DSC alert without verbally cancelling it as well, otherwise the rescue authorities will not be aware that this is a false alarm.

9.3 Receiving a call

9.3.1 Individual routine call

If an individual routine call is received, the radio will sound an incoming call alarm. The display will flash between displaying "CALL FROM", the caller's MMSI number and the specified working channel (Fig 9.11).

Fig 9.11 - Receiving incoming individual routine call

If the caller's MMSI is stored in the MMSI directory (see section 10.2), the display will show the name stored instead of the MMSI. Press **OK** to accept the call, or **ON/C** to reject it.

If the call has been accepted, the display will show "SEND ACKNOWLEDG". Press **OK** to send a call acknowledgement and automatically switch to the specified working channel.

9.3.2 Public correspondence call

A public correspondence call is a call made from a land-based telephone, which is routed via a coast station. This is only available in countries operating the necessary network.

NOTE

At present, it is not possible to receive incoming calls on the public correspondence network – calls can only be made from the radio. *This section is for reference purposes only.*

When a public correspondence call is received, the radio will sound an incoming call alarm. The display will flash between "TEL CALL FROM" and the caller's telephone number. If the caller's number is stored in the telephone number directory (see section 10.3), then the display will show the name stored instead of the telephone number (Fig 9.12).

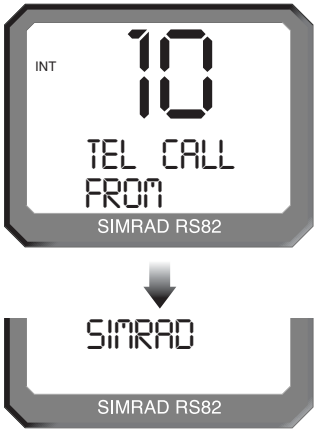


Fig 9.12 - Receiving incoming public correspondence call

Press **OK** to accept the call – the display will show "CALL IN PROGRESS" – or **ON/C** to reject it.

NOTE

As the telephone call is transmitted via a VHF channel specified by the coast station, it will still be necessary to press the **PTT** key to talk and release it to listen, as with a normal VHF call. The coast station will disconnect the call if the **PTT** is not pressed for 5 seconds at least every 45 seconds.

To end the call, press the **ON/C** key, or wait until the other participant replaces the receiver (an end call signal will be sent to the radio). Replace the handset in the cradle.

9.3.3 All Ships Safety call

If an All Ships Safety call is received, the radio will sound an incoming call alarm. The display will flash between "ALL SHIPS SAFETY" and the caller's MMSI number. If the caller's MMSI is stored in the MMSI directory (see section 10.2), the display will show the stored name instead.

OK

OK ON/C

Press **OK** to accept the call – the display will change to "REPLY ON CH X" (where "X" is the specified working channel), or press **ON/C** to reject the call. Press **OK** again to switch back to the working channel.

9.3.4 All Ships Urgency call

If an All Ships Urgency call is received, the radio will sound an incoming call alarm. The display will flash between displaying "ALL SHIPS URGENCY" and the caller's MMSI number. If the caller's MMSI is stored in the MMSI directory, the display will show the name stored instead (Fig 9.13).

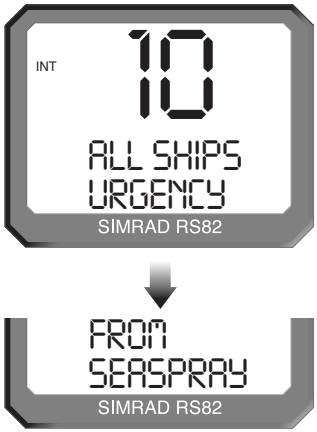


Fig 9.13 - Incoming All Ships Urgency call

OK ON/C

Press **OK** to accept the call and automatically switch to channel 16, or **ON/C** to reject it.

NOTE

All Ships Urgency calls always use channel 16 as the working channel.

9.3.5 Group call

If the radio has a Group ID MMSI number (cf. section 8.2.2) and a group call is received, the radio will sound an incoming call alarm. The display will flash between displaying "ROUTINE GROUP CALL", the caller's MMSI number and the specified working channel (Fig 9.14).

Fig 9.14 - Incoming group call

If the caller's MMSI number is stored in the MMSI directory (see section 10.2), the display will show the name stored instead. Press **OK** to accept the call – the display will change to "REPLY ON CH X" (Fig 9.15), where "X" is the specified working channel – or **ON/C** to reject the call.

Fig 9.15 - Working channel specified by incoming group call

Press **OK** again to switch back to the working channel.

9.3.6 Distress Alert call

If a Distress Alert call is received, the radio will sound an incoming call alarm. The display will flash between "DISTRESS ALERT" and the caller's MMSI number along with the nature of the Distress Alert.

If the caller's MMSI number is stored in the MMSI directory (see section 10.2), the display will show the name stored instead of the MMSI number (Fig 9.16).

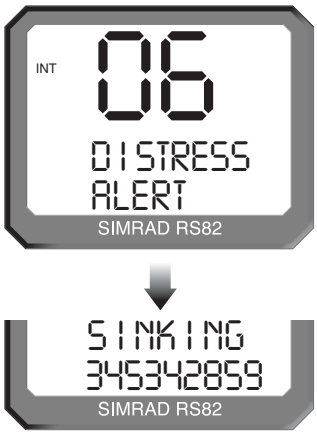


Fig 9.16 - Incoming Distress Alert call

OK ON/C

Press **OK** to accept the call and automatically switch to channel 16, or **ON/C** to reject the call. Full details of the Distress Alert may be viewed in the call log (see section 9.4).

NOTE Distress Alert calls always use channel 16 as the working channel.

9.3.7 Distress Alert acknowledgement

If an acknowledgement is received for a Distress Alert sent (normally from a coast station or Rescue Co-ordination Centre), the radio will sound an incoming call alarm.

The display will flash between "DISTRESS ACKNOWLEDG" and the MMSI number of the vessel in distress (or your MMSI number, if the Distress Alert was sent by the RS82 and the transmission has been cancelled).
If the vessel's MMSI number is stored in the MMSI directory (see section 10.2), the display will show the name stored instead (Fig 9.17).

Fig 9.17 - Distress acknowledgement received

NOTE The MMSI number/name displayed will be that of the vessel in distress, not the station that has acknowledged the call.

OK ON/C Press **OK** to accept the acknowledgement and automatically switch to channel 16, or **ON/C** to ignore the call.

NOTE Distress Alert calls always use channel 16 as the working channel.

9.3.8 Distress Relay call

The Distress Relay facility enables an incoming Distress Alert call to be forwarded via boats within receiving distance of the call, thus increasing the potential range of the Distress Alert call. If a Distress Relay call is received, the radio will sound an incoming call alarm.

The display will flash between "DISTRESS RELAY" and the vessel's MMSI number (Fig 9.18). If the vessel's MMSI number is stored in the MMSI directory (see section 10.2), the display will show the name stored instead.

Fig 9.18 - Incoming distress relay call

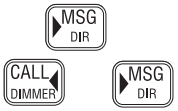
NOTE The MMSI number/name displayed will be that of the vessel in distress, not the vessel that relayed the call.

Press **OK** to accept the call and automatically switch to channel 16, or **ON/C** to reject the call.

9.4 Viewing the call log

The call log records details of the last 20 DSC or telephone calls received, including date and time, the type of call and the caller ID. There are two separate logs – one for standard calls, the other for distress calls.

NOTE All calls are logged, even those rejected by pressing **ON/C**.



Press ► **MSG** to access the call log menu. If the call logs are empty the display will show "NO CALLS RECEIVED" before returning to the default display. Use the **CALL** ◄ and ► **MSG** keys to switch between the standard call log (indicated by a small "1" shown next to the large digits) and the distress call log (indicated by a small "2" shown next to the large digits).

Press the **VOL** ▲ and **VOL** ▼ keys to scroll through the log entries. The display will show the call type and the date/time the call was received (Fig 9.19). The small digit shows the log type ("1" - standard call log, or "2" - distress call log) and the large digits show the entry number – the first entry shown is the most recent call.

Fig 9.19 - Viewing call log entry

NOTE The date and time displayed uses the date/time data received from the navigational receiver interfaced with the radio, not from the incoming message. If a navigational receiver was not connected to the radio at the time the message is received, the date and time will not be displayed.

Press **OK** to view the details of the selected call – the display will show the caller's number (or the name if the number is stored in the directory).

Press **VOL** ▲ and **VOL** ▼ to display any relevant additional information, for example, the nature of distress and the position of the vessel in distress if viewing the distress call log (Fig 9.20, p. 81).

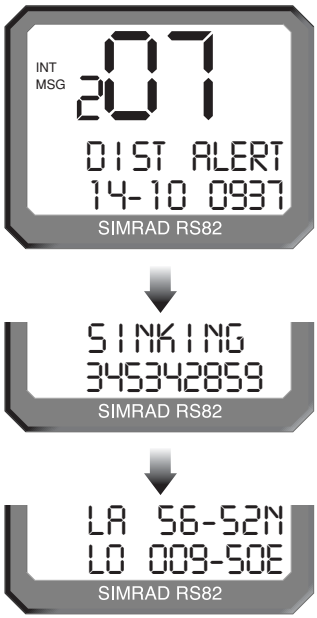


Fig 9.20 - Displaying additional call information

ON/C

Press **ON/C** to return to the log entries menu. Press **ON/C** again to exit the call log menu.

9.5 Position over 4 hours old

Normally current position data is supplied automatically to the radio via an interfaced navigational receiver, or by manually entering a position.

OK

ON/C

If the last recorded position is over 4 hours old, the display will SHOW "POSITION 4 HOURS OLD". Press **OK** to confirm and manually enter a position (refer to section 11.3), or press **ON/C** to ignore the message.

NOTE

This display will be shown 30 minutes after switch on, if there is no NMEA position data being received, or the position has not been manually entered.

10 THE DIRECTORY

The directory function allows frequently used boat MMSI, Coast Station MMSI and telephone numbers to be stored in the radio. To enter the directory, press **SHIFT** then ► **MSG** (**DIR**).

10.1 Switching between the directories

The large digits will show the current entry number and the smaller digit to the left will show the currently selected directory:

1. Boat MMSI directory
2. Telephone number directory (used in public correspondence only)
3. Coast Station MMSI directory (used in public correspondence only)

Use the **CALL** ◄ and ► **MSG** keys to switch between directories.

10.2 Viewing the directory

Select the appropriate directory using the **CALL** ◄ and ► **MSG** keys. Use the **VOL** ▲ and **VOL** ▼ keys to scroll through the directory entries (Fig 10.1).

Fig 10.1 - Scrolling through the directory entries

10.3 Entering a number

Press **OK** to begin entering a new number – the large digits will show the entry number in the directory ("1" for the first entry).

Enter the name first; use the **VOL** ▲ and **VOL** ▼ keys to scroll through the alphabetical characters and the numeric keypad to enter any numbers (Fig 10.2).

Fig 10.2 - Entering a new name into the directory

Press ► **MSG** to move the cursor forward, or **CALL** ◄ to move back and correct any errors (the cursor position is indicated by the flashing character, enter a new character to overwrite). Press **OK** to confirm the entry and move on to the MMSI entry.

Use the numeric keypad to enter the number (Fig 10.3). Press the **CALL** ◄ and ► **MSG** keys to correct any errors. The cursor position is indicated by the flashing number; enter a new number to overwrite an incorrect number. Press **OK** to confirm and store the entry in the directory.

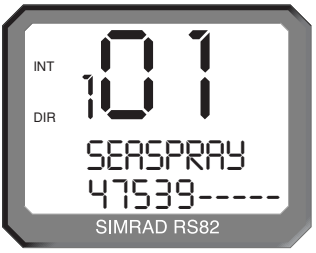


Fig 10.3 - Entering the MMSI number

Press **ON/C** at any time to abort to the default display.

NOTE

When using the Boat or Coast Station directories the entry will not be accepted, unless all nine digits of the MMSI have been entered.

10.4 Editing a number

Select the directory entry to be edited and press **OK**. Use the **VOL** ▲ and **VOL** ▼ keys to highlight either the name or the number for editing – the selected field will flash. Press **OK** again to begin editing the selected field.

Use the **CALL** ◄ and ► **MSG** keys to move the cursor – the cursor position is indicated by the flashing character. Enter a new character to overwrite, use the numeric keypad to enter a number, or use **VOL** ▲ and **VOL** ▼ to scroll through the alphabetical characters (Fig 10.4).

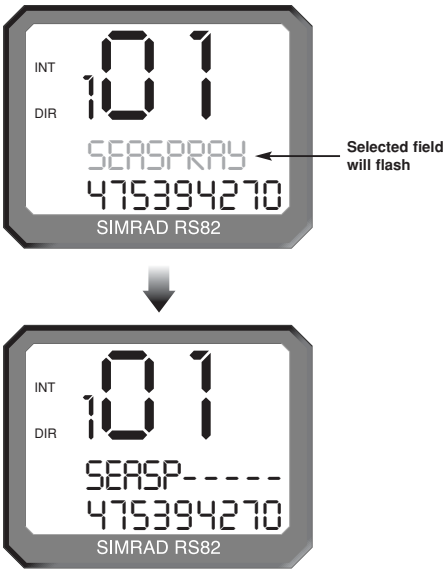


Fig 10.4 - Editing an existing directory entry

Press **OK** to confirm and store the edited entry, or **ON/C** to abort entry.

11 MISCELLANEOUS FUNCTIONS

11.1 Selecting Weather Watch

The Weather Watch function enables the radio to monitor a single weather channel specified in the memory scan select function (section 8.1.4). A transmission on a Weather channel is preceded by a tone – if this is detected by the radio, it will trigger an alert allowing the user to switch to the Weather channel.

To enable Weather Watch, press **SHIFT** followed by the **USER** (**WX WATCH**) key. The "WX" legend will be shown in the top left-hand corner of the display and the selected weather channel will be shown on the bottom line of the display (Fig 11.1).

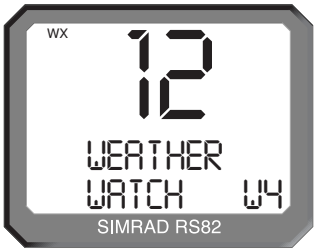


Fig 11.1 - Selecting Weather Watch mode

NOTE

If a Weather channel has not been specified, the display will show "NO WX CHAN SELECTED" and Weather Watch will not be enabled (please refer to section 8.1.4 for instructions on how to select a Weather channel).

NOTE

If the Weather Watch function is not available (e.g. if no Weather channels are programmed into the radio), the display will show "WX NOT ENABLED".

To cancel Weather Watch, press **SHIFT** then **USER** (**WX WATCH**).

11.1.1 Weather Watch alert

If a Weather Watch alert tone is detected by the radio on the specified Weather channel, the radio will sound a 10-second alarm and the display will show "WEATHER ALERT".

Press **OK** to cancel the alarm and switch to the Weather channel, or **ON/C** to cancel the alarm and ignore the weather alert.

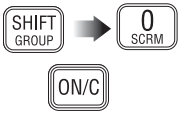
NOTE

Because the Weather channels transmit a continuous carrier signal, it is not possible for the RS82 to detect when the transmission has ended.

Press **ON/C** to return to the working channel once the transmission has ended.

11.2 Security mode (voice scrambler)

For additional security, a voice scrambler function is available as an optional accessory. The scrambler uses frequency inversion to encrypt the transmission and will allow secure transmission between compatible radios.



To enable security mode press **SHIFT** followed by **0** (**SCRM**). The display will show "SEC", indicating that security mode is on. To exit security mode, press **SHIFT** followed by **0** (**SCRM**) again, or **ON/C**.

The security mode will be cancelled if the RS82 is placed either into another mode that requires the use of the **PTT** key (e.g. intercom), or if a DSC call is made/received.

11.3 Losing SimNet data

If the selected SimNet nav data source is lost for any reason, after one minute an alarm will sound to all station speakers, and the display will show "SOURCE DATA LOST" (Fig 11.2).

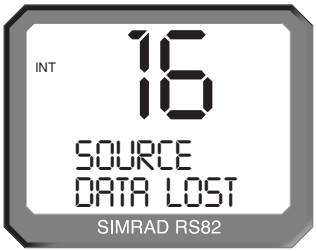


Fig 11.2 - SimNet nav data source lost

The alarm will also be sent across the SimNet bus, where it may be repeated by other equipment that is able to do so.

Press **OK** or **ON/C** to cancel the alarm and return to the previous display. The alarm can also be cancelled by other equipment on the bus that is repeating the alarm.

If nav data is also being received via the NMEA0183 input, the RS82 will automatically switch to this source after the loss of SimNet data.

11.4 Losing NMEA data

If the NMEA0183 nav data source is lost (and no SimNet nav data is being received), an alarm will sound to all station speakers after one minute and the display will show "NMEA LOST" (Fig 11.3).

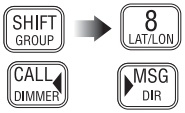
Fig 11.3 - NMEA0183 nav data source lost

NOTE The alarm for the loss of NMEA0183 data is not sent across the SimNet bus.

Press **OK** or **ON/C** to cancel the alarm and return to the previous display.

11.5 Editing Latitude, Longitude and UTC

Normally, position and time data should be supplied to the RS82 via a GPS or other navigational device connected to the radio. However, if this is not possible, the position and time can be entered manually.



Press **SHIFT** then **8** (**LAT/LON**). The display will show "ENTER LAT". Enter the Latitude using the numeric keypad (Fig 11.4). Use the **CALL** ◄ and ► **MSG** keys to move the cursor to correct any errors. The cursor position is indicated by the flashing number. Enter a new number to overwrite an incorrect number.

Fig 11.4 - Manually entering the position

The final digit specifies whether the Latitude is north or south of the Equator – use the **VOL** ▲ and **VOL** ▼ keys to toggle between "N" and "S". Press **OK** to confirm and move on to entering the Longitude (the display will show "ENTER LON"), or press **ON/C** to abort entry.

Enter the Longitude using the numeric keypad. Use the **CALL** ◄ and ► **MSG** keys to move the cursor to correct any errors. The cursor position is indicated by the flashing number. Enter a new number to overwrite an incorrect number.
The final digit specifies whether the Longitude is west or east of the Meridian – the **VOL** ▲ and **VOL** ▼ keys to toggle between "W" and "E".

Press **OK** to confirm and move on to entering the time (the display will show "ENTER UTC"), or press **ON/C** to abort entry. Enter the UTC time (formerly known as GMT) in 24hr-format using the numeric keypad (Fig 11.5).

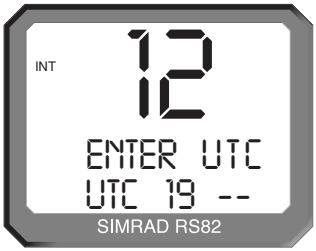


Fig 11.5 - Manually entering time (UTC)

Use the **CALL** ◄ and ► **MSG** keys to move the cursor to correct any errors. The cursor position is indicated by the flashing number. Enter a new number to overwrite an incorrect number. Press **OK** to confirm all settings, or **ON/C** to abort entry.

WARNING

This data is only stored temporarily and will be lost when the radio is switched off. Since the accuracy of this information is vital in the event of a Distress Alert transmission being necessary, we strongly recommend that a GPS or other navigational device is permanently interfaced with the radio. This data will then be automatically supplied and updated without the need for user intervention.

11.6 Toggling between Lat/Long and UTC views

If the Position View option (see section 8.3.2) is turned on, the current position will be displayed on the bottom two lines of the display.
The UTC time can be displayed instead by pressing **SHIFT** then **8** (**LAT/LON**) key for 2 seconds (Fig 11.6).
Repeat the above key sequence to toggle between the position and time displays.

Fig 11.6 - Displaying UTC time

11.7 Intercom

If the system comprises more than one station, or includes intercom speakers, it is possible to make an intercom call to a selected position from a handset.

11.7.1 Making an intercom call

Press **SHIFT** then **6** (**INTERCOM**) to enter intercom mode. The display will show "INTERCOM STN X – STN Y", where "X" is the ID of the current station being used and "Y" is the first of the other stations in the system (Fig 11.7).

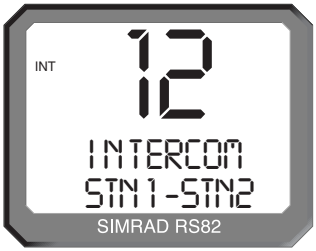


Fig 11.7 - Making an intercom call to Station 2 from Station 1

Press the **VOL ▲** and **VOL ▼** keys to scroll through the available station/intercom that can be called from the station:

"Stn 1–Stn 2"	Intercom call to Station 2
"Int Spkr 1"	Intercom call to Intercom speaker 1

Press the **PTT** key or **OK** to activate the intercom, or press **ON/C** to cancel. Once the call has been initiated, further presses of the **ON/C** key will re-sound the call alarm. Pressing the **PTT** key will open the audio path to the called station.

NOTE The call will be terminated, if it is not accepted within 15 seconds.

When calling an intercom speaker, use the **VOL ▲** and **VOL ▼** keys while the **PTT** key is held to adjust the intercom speaker volume. This option is not available when calling another station or making an all speaker / PA call – the current volume settings for each position will be used.

To end the intercom call, press **ON/C** or return the handset to its cradle.

NOTE While making an intercom call, all other stations will display "STATION X OCCUPIED".

NOTE If the interrupt intercom option (section 8.3.4) is disabled and a VHF transmission is being received, the display will show "SIGNAL PRESENT" until the transmission has ended. If intercom interruption is enabled, the intercom call will be interrupted if a VHF transmission is received.

11.7.2 Receiving an intercom call

If an intercom call is received from another station, the display will show "INTERCOM FROM STN Y", where "Y" is the ID of the station making the intercom call (Fig 11.8). To end an intercom call, press **ON/C** or return the handset to its cradle.

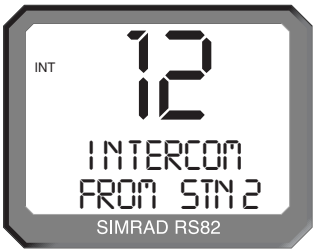


Fig 11.8 - Receiving an intercom call from Station 2

11.8 Station speaker mute

For complete silence at an operating position, the station speaker (including the handset speaker) may be muted. To mute the speaker, press **SHIFT** followed by **7** (**SPEAKER**) on the specific handset that is used with the speaker.

To disable mute, press **SHIFT** followed by **7** (**SPEAKER**) again, use the **VOL ▲** and **VOL ▼** keys, or lift the handset from the cradle. If the system is powered down, the volume settings will be restored the next time the system is turned on.

NOTE This will only affect the speaker that is used with this specific handset, e.g. handset 1 will only mute the speaker connected to the Station 1 terminals. To mute any other speakers on the system it will be necessary to go to the relevant handset and select mute.

11.9 iDSC

The RS82 can be integrated with one of Simrad's navigational displays (the xx33, xx42 and xx52 series) enabling details of any incoming DSC calls to be displayed on the unit. Please refer to the instruction manual of the relevant unit for more details. (Section 12.1 provides interfacing details.)

PART IV

INSTALLATION

12 INSTALLATION

12.1 Physical installation

The RS81/RS82 is a modular radio system that is very simple to install. However, the performance of the radios is directly affected by the quality of the installation. Please read these instructions carefully before attempting installation. If in any doubt, consult a qualified marine electronics engineer.

12.1.1 Transceiver installation

The RS80B transceiver unit should be installed in a concealed location such as in a locker or behind the switch panel.

WARNING

The transceiver unit is not waterproof, it must therefore not be installed in any location where it is likely to be exposed to excess moisture (e.g. a wet locker or an outside locker).

The fins on the top of the transceiver act as a heatsink to dissipate heat generated by the set when in use, which maintains the high efficiency of the radio. The free circulation of air is essential – if mounting the transceiver in an enclosed space, ensure that the space is well ventilated.

The transceiver requires a flat surface with an area of at least 170 x 245mm (6.8 x 9.8in) for mounting. Allow sufficient space beneath the unit for cable entry – at least 50mm (2.0in) is recommended. The surface should be rigid and sturdy enough to be able to support the weight of the unit, taking into account the shock loads likely to be encountered when the vessel is underway in heavy seas.

Fix the transceiver unit to the surface using the four self-tapping screws supplied. The four fixing points are at the corners of the transceiver unit – the bottom two are underneath the terminal cover (Fig 12.1).

Fig 12.1 - Transceiver box mounting

12.1.2 Handset installation

The handset should be sited so that engine noise and vibration, or other background noise does not make it difficult for the operator to hear. As microphones and loudspeakers contain powerful magnets, the handset and speakers should not be installed within 1m (3ft 3in) of any compasses, whether magnetic or electronic.

The handset is connected to a 5m (16.5ft) extension cable, therefore the handset should be fitted within reach of the transceiver box (for longer runs 20m extension cables are also available as separate accessories; please refer to section 13.8).

The handset cradle should be mounted on a flat surface with enough space to allow the bulkhead socket for the extension cable to be fitted alongside. Space should also be allowed for the accompanying loudspeaker to be fitted nearby.

NOTE

The handset and bulkhead socket are waterproof. However, if the handset is to be fitted in an exposed location (e.g. on the flybridge of a power boat), it is recommended that the handset, and especially the bulkhead socket, are fitted to an angled or vertical surface to prevent standing water lying on the handset face or inside the bulkhead socket, which could corrode the pins.

Fit the supplied template for the handset cradle to the desired mounting location. Drill four 3.2mm (0.125in) pilot holes in the indicated positions. If drilling into GRP, it is recommended that the holes are also countersunk, to prevent the gelcoat splitting when the self-tapping screws are inserted.

Fit the supplied template to the desired mounting location for the bulkhead socket. Drill a 23.5mm (0.94in) hole and four 2.4mm (0.1in) pilot holes. Again, the pilot holes should be countersunk if drilling into GRP. Fit the bulkhead socket and run the cable to the transceiver box position.

NOTE

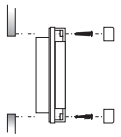
It is recommended that the cable is routed away from any other cables carrying high current (e.g. mains power cables), or pulsed signals (e.g. transducer cables) to avoid possible interference.

If the handset is being removed, the waterproof cover should always be fitted to the bulkhead socket to protect the pins from possible corrosion.

12.1.3 Station speaker installation

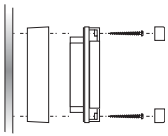
The loudspeaker should be installed near the handset and can be flush-mounted or surface mounted with the supplied pattress.

Flush mounting



Attach the self-adhesive gasket to the back of the loudspeaker. Remove the four detachable corners of the speaker which conceal the mounting holes. Apply the supplied cutting template to the mounting position. Carefully cut out the aperture required for the speaker back and use the short self-tapping screws provided. Refit the corners to conceal the screw fixings.

Surface mounting



Drill a 5mm (0.2in) hole for the speaker cable. Attach the self-adhesive gasket to the back of the loudspeaker. Remove the four detachable corners which conceal the mounting holes. Fit the pattress to the back of the speaker and use the long self-tapping screws provided to fix the speaker and the pattress block to the bulkhead. Refit the corners to conceal the screw fixings.

12.2 Electronic installation

Electronic installation is straightforward – all peripherals connect to the transceiver unit ("black box") using the clearly labelled plug-in terminals (Fig 12.2).

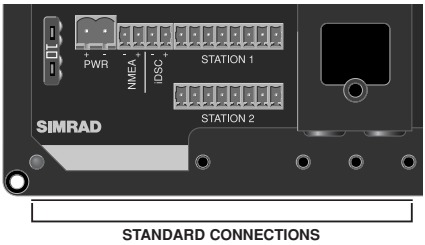
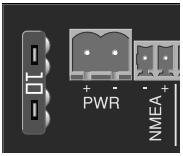


Fig 12.2 - Transceiver terminal connections

NOTE

The diagram shows the terminal bay with the standard connections and the SimNet connectors (see section 12.2.5).

If it is necessary to shorten any of the cables, ensure the ends are re-tinned for the best quality connection.



The transceiver unit is fitted with a 10Amp "blade"-type fuse. It is recommended that the radio is connected to a 10Amp fused switch or breaker on the boat's switch panel.

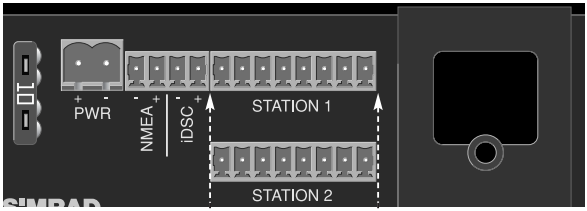
Connect the supplied power cable to the terminals marked PWR + and - as follows:

Terminal Number	Wire Colour
1	Red
2	Black

12.2.1 Handset

A single cable links the control panel to the transceiver unit. The standard model can support up to two control stations (for available options see introductory section 1.1).
One fixed station is supplied with the radio – additional stations are supplied as separate accessories. The control stations can be either an AHS81 handset, or an AHS82 handset which is supplied with a separate loudspeaker.

Connect the main control station to the "Station 1" terminals on the transceiver unit as shown (Fig 12.3).



Terminal Number	Wire Colour
1	Brown
2	Green
3	Red
4	White
5	Blue
6	Yellow
7	Orange
8	Black

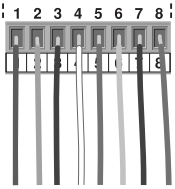


Fig 12.3 - Control panel terminal connections

An additional control station should be wired in the same manner and connected to "Station 2"(Fig 12.4).

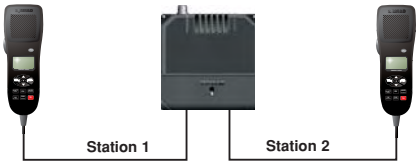
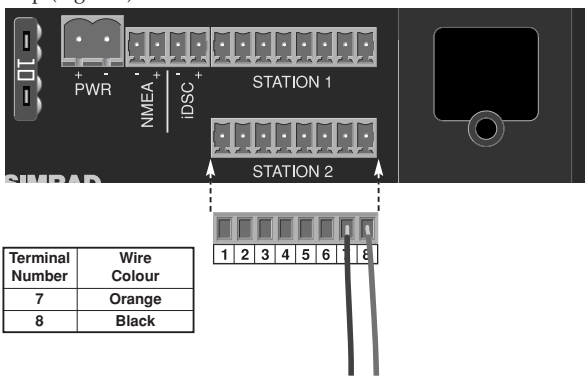


Fig 12.4 - Example of a typical dual-station installation

12.2.2 Loudspeakers

The RS82 can be fitted with a Simrad LS80 station speaker or third party station speakers with an impedance of 4Ω.

Connect the station speaker to terminals 7 and 8 of the terminal strip (Fig 12.5).



Terminal Number	Wire Colour
7	Orange
8	Black

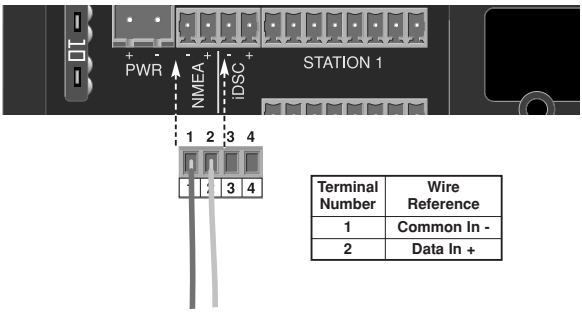
Fig 12.5 – Station loudspeaker terminal connections

12.2.3 NMEA0183 input

The inbuilt NMEA0183 processor allows navigational position information to be received from a GPS or Chartplotter. The boat's position is automatically transmitted when a Distress Alert is initiated. *Note that this is only applicable in a system with an RS82 handset.*

NMEA input must be of the 0183 format, versions 2.0–3.0, outputting sentences *GLL, RMC* and *ZDA* at a Baud rate of 4800.

The "NMEA Out" connections from the GPS/Plotter should be connected to the "NMEA In" terminals as shown (Fig 12.6):



Terminal Number	Wire Reference
1	Common In -
2	Data In +

Fig 12.6 - NMEA input terminal connections

12.2.4 iDSC output

The RS81/82 is designed to integrate with other Simrad equipment, which enables DSC call information to be displayed on the 33, 42 and 52 series Chartplotters.

Connect the iDSC input terminals of the chartplotter to the terminals marked “iDSC” as shown (Fig 12.7):

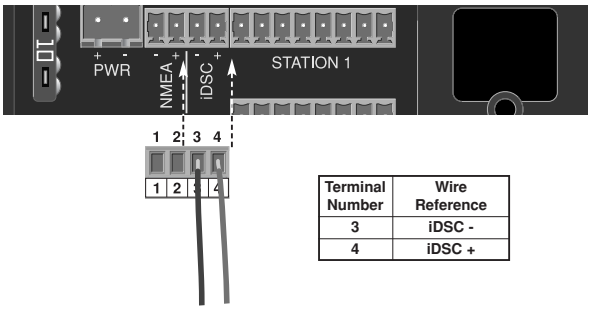


Fig 12.7 - iDSC output terminal connections

12.2.5 SimNet connectors

The two circular ports in the centre of the panel serve as connectors for SimNet cables (Fig 12.8).

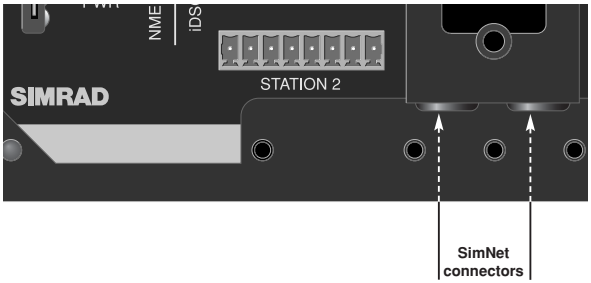
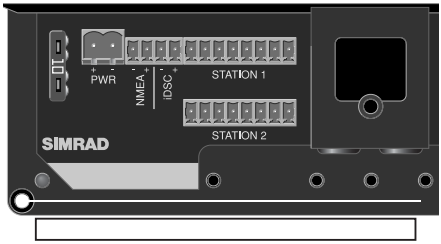


Fig 12.8 - SimNet connectors

12.2.6 Summary

Summary of the RS81/82 connections –



STANDARD CONNECTIONS

Station 1	
Terminal Number	Wire Colour
1	Brown
2	Green
3	Red
4	White
5	Blue
6	Yellow
7	Orange
8	Black

Station 2	
Terminal Number	Wire Colour
1	Brown
2	Green
3	Red
4	White
5	Blue
6	Yellow
7	Orange
8	Black

NMEA/iDSC	
Terminal Number	Wire Reference
1	Common In -
2	Data In +
3	iDSC -
4	iDSC +

PWR	
Terminal Number	Wire Reference
+	Red (12v in)
-	Black (0v)

12.2.7 Cable strain relief

Once all the cables have been run to the appropriate peripherals and connected to the transceiver unit they should be secured to ensure that they are not snagged or exposed to excess strain.

Screw the strain relief tab to the cable exit port on the transceiver unit using the screws supplied and secure the cables to the tab using the wraps as shown (Fig 12.9):

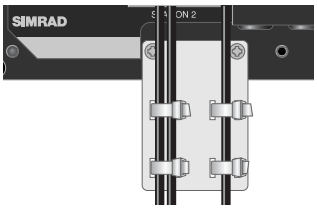


Fig 12.9 - Cable strain relief

Replace the terminal cover and secure by tightening the retaining screw.

12.3 Antenna installation

The most important factor in the performance of the radio will be the quality and positioning of the antenna. Most recorded problems with VHF radios are related to poor antenna siting, faulty cabling, poor quality cable joints and low voltage supply. Even a VHF as technically advanced as the RS81/RS82 cannot compensate for these factors. Therefore, if replacing an existing VHF installation, it is important that the antenna is thoroughly checked for any faults or damage before use.
As the range of VHF signals are governed by line of sight (see section 13.3), the antenna should be placed as high as possible, while remaining clear of any metallic objects that could influence its resonance.

The most popular antennae for marine use are 1m (3ft 3in) long. On sailboats these are usually mounted on the masthead, where the length of the antenna keeps it clear from the navigation lights and windvanes, for example. This type of antenna can also be mounted on the cockpit roof or powerboat garages.

Longer whip antennae are recommended for larger boats – these radiate the same total power as smaller antennae, but concentrate it into a narrower beam, which is advantageous on a tall mast at extreme range, where concentrating the available power into a narrow horizontal beam becomes more important. However, if the antenna is not vertical when transmitting, the beam will be angled either too high or too low (see the effect of heel on range, Fig 12.10).

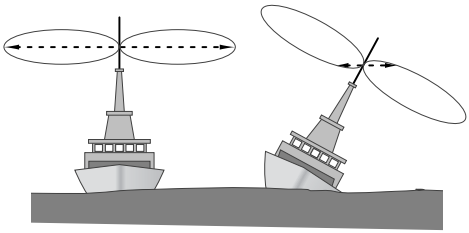


Fig 12.10 - Effect of heel on range of longer whip antenna

Here the wider beam of the shorter marine antenna will be more universally effective, although the signal will be weaker (Fig 12.11, p. 103).

Therefore vessels with a large heel angle (small sailboats) would be better choosing a short masthead antenna. Your local agent should be able to provide specific advice on antenna choice for the vessel it is to be fitted to.

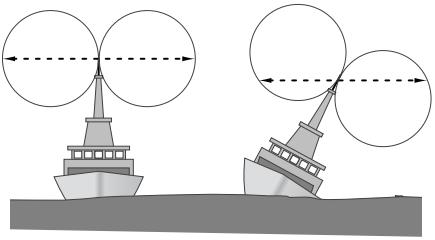


Fig 12.11 - Effect of heel on range of 1m marine antenna

WARNING

The antenna coaxial cable and any connectors used must be rated at 50Ω. Under no circumstances should standard domestic TV cable and connectors be used. Incorrectly rated cabling and connectors could result in power not reaching the antenna, but power could also be reflected back into the radio, damaging it in the process.

The quality of connections and integrity of the cable (without breaks in the sheathing) will directly affect the performance of the radio. Poor soldering or corrosion of the terminals can impair performance. We recommend that screw or crimp terminal type connectors are not used for any through-deck fittings – a good quality waterproof solder terminal connector will be less susceptible to poor connection due to corrosion of the contacts. To ensure the best performance of the radio, the antenna cable should be routed where it is least likely to interfere with, or receive interference from, other electronic equipment, such as echosounder transducer cables and high-current carrying cables.

The antenna cable should terminate in a standard marine PL259 plug fitting. Connect the antenna plug to the socket on the top of the transceiver unit and screw the retaining collar down (Fig 12.12).

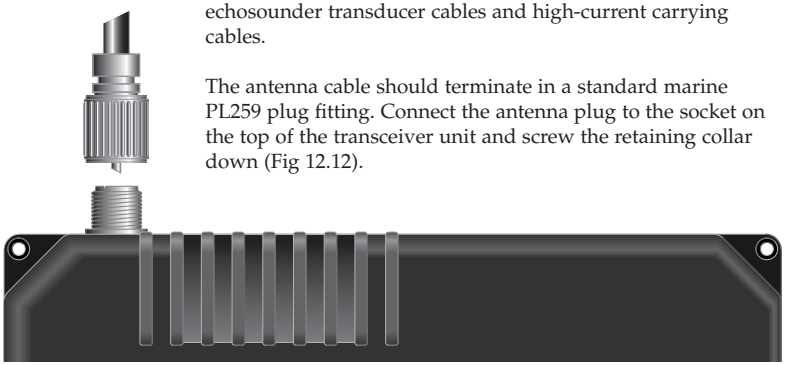


Fig 12.12 - VHF antenna connection

NOTE

To avoid possible water damage to the radio, it is recommended that the antenna cable is looped to provide a drip path.

12.4 Electrical interference suppression

Interference generated by the alternator of the engine may occasionally cause problems. The RS81/RS82 has been designed to minimise the effects of outside interference. However, precautions should still be taken: route the power supply and antenna cables away from the engine compartment. The cable run should not be using the same trunking as other cables carrying high current. The antenna cable should also be kept separate from the radio's power cable.

Engines with spark ignition – as well as some refrigerators – should be fitted with suppressors. Your local agent should be able to give advice on this, and supply suppression kits where necessary.

13 FURTHER INFORMATION

13.1 Operating procedures

The following operating procedure summary has been proposed by the UK Maritime and Coastguard Agency. It is not exhaustive and should not be regarded as a replacement for information provided by the proper two-day VHF/DSC training course required for all VHF licence holders.

13.1.1 Sending a Distress Alert

1. Send a Distress Alert call (cf. section 9.3.6).
2. Wait approximately 15 seconds for a DSC acknowledgement from the Coastguard or a ship station.
3. On receipt of a DSC acknowledgement, or after about 15 seconds, transmit the following Distress Alert call on channel 16:

"Mayday, Mayday, Mayday"
"This is (*name of vessel repeated three times*)"
"Mayday (*MMSI number and name of vessel or call sign, spoken once, Position – Nature of distress - No of people*)"
"I require immediate assistance"
"Over."

If the vessel is not in "grave and imminent danger", an All Ships Urgency call followed by a spoken "Pan Pan" call or a routine call to the nearest coastguard station may be more appropriate.

WARNING **It is a prosecutable offence to initiate a Distress Alert call for any other reason than that the vessel and/or crew is in imminent danger.**

13.1.2 Acknowledging and relaying a Distress Alert call

When a DSC Distress Alert is received, an audible alarm will sound. Immediately cease any transmission that may interfere with distress traffic and continue a watch on channel 16.

If there is no DSC acknowledgement from a coast station or ship, after a short interval acknowledge by voice on channel 16:

"Mayday (*MMSI of vessel in distress, repeated three times*)"
"This is (*name of own vessel, repeated three times*)"
"Received Mayday (*state the assistance you can give*)"
"Over."

A similar response should be given to a distress relay, using the words "Mayday Relay" instead of "Mayday".

13.1.3 Cancelling a Distress Alert

If a DSC Distress Alert is sent accidentally, cancel it immediately on the RS81/RS82 by pressing the **ON/C** button to prevent repeats, then make the following announcement on channel 16:

"This is (*name of vessel or call sign, MMSI*)"
"Cancel DSC Alert sent (*date & time UTC*)"
"Over."

Do not simply cancel the DSC alert without verbally cancelling it as well, otherwise the rescue authorities will not be aware that this is a false alarm.

13.1.4 Alerting all vessels within range

If the vessel is outside of coast radio range and needs to issue a safety warning to all vessels within radio range, transmit an All Ships Safety call by DSC. After about 15 seconds transmit on channel 16 the safety call and message as follows -

"Securité, Securité, Securité"
"All stations (or called station)" – ***repeat three times***
"This is (*MMSI and name or call sign of own vessel*)" –
***repeat text of safety message*.**
"Over."

13.1.5 Calling a coast radio station

Enter the MMSI number of the station into the RS82, either manually or from the directory. When the call is acknowledged, the working channel for voice communication will be indicated and the RS82 will automatically switch to that channel. Make a voice call as normal.

13.1.6 Making an intership call

Enter the vessel's MMSI into the RS82, either manually or from the directory. Before sending the call, enter the intership channel to be used for subsequent communication. When the alarm sounds on the called vessel, its operator should acknowledge by DSC, then respond by voice on the selected channel.
If the MMSI number of the vessel is not known, call as now on channel 16.

NOTE If no response is received, call on channel **13** (this is the GMDSS bridge-to-bridge communication channel).

13.2 NMEA sentences received

The following NMEA0183 sentences are processed by the RS82, in order to transmit the boat's position if a Distress Alert is initiated: NMEA0183 version 2.0 and 3.0 – *GGA, GLL, RMC, ZDA*.

13.3 Transmission range

Because VHF signals travel in a straight line and are not reflected back off the ionosphere as lower frequency signals are, the range of VHF signals is limited to "line of sight", beyond which the other vessel passes behind the curve of the Earth. Therefore, the range will increase greatly the higher above sea level the antenna is, as Fig 13.1 illustrates (assuming maximum transmission power is used).

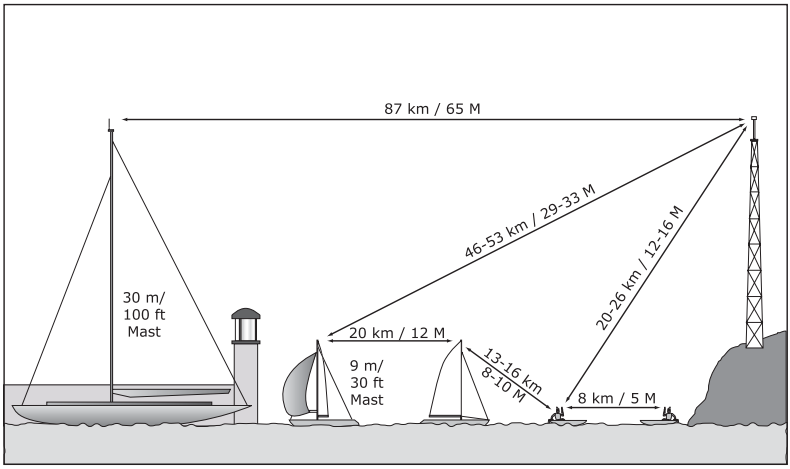


Fig 13.1 - VHF transmission ranges

The typical ship-to-ship range of a fixed VHF radio, such as the RS82, with a masthead antenna will be approximately 20 km (12 miles). This will increase as height above sea level increases, or if the other user's antenna is at a greater height. Note, that the range between the yacht with the antenna mounted on a 9m (30ft) mast and the shore station increases to 46–53 km (29–33 miles).

13.4 Frequency of channels

Channel Designators	Tx	INT Rx	USA Rx
0	156.000	156.000	156.000
60	156.025	160.625	156.025
01	156.050	160.650	156.050
61	156.075	160.675	156.075
02	156.100	160.700	156.100
62	156.125	160.725	156.125
03	156.150	160.750	156.150
63	156.175	160.775	156.175
04	156.200	160.800	156.200
64	156.225	160.825	156.225
05	156.250	160.850	156.250
65	156.275	160.875	156.275
06	156.300	156.300	156.300
66	156.325	160.925	156.325
07	156.350	160.950	156.350
67	156.375	156.375	156.375
08	156.400	156.400	156.400
68	156.425	156.425	156.425
09	156.450	156.450	156.450
69	156.475	156.475	156.475
10	156.500	156.500	156.500
70	156.525	156.525	156.525
11	156.550	156.550	156.550
71	156.575	156.575	156.575
12	156.600	156.600	156.600
72	156.625	156.625	156.625
13	156.650	156.650	156.650
73	156.675	156.675	156.675
14	156.700	156.700	156.700
74	156.725	156.725	156.725
15	156.750	156.750	156.750
75	156.775	156.775	156.775
16	156.800	156.800	156.800
76	156.825	156.825	156.825
17	156.850	156.850	156.850
77	156.875	156.875	156.875

Channel Designators	Tx	INT Rx	USA Rx
18	156.900	161.500	156.900
78	156.925	161.525	156.925
19	156.950	161.550	156.950
79	156.975	161.575	156.975
20	157.000	161.600	161.600
80	157.025	161.625	157.025
21	157.050	161.650	157.050
81	157.075	161.675	157.075
22	157.100	161.700	157.100
82	157.125	161.725	157.125
23	157.150	161.750	157.150
83	157.175	161.775	157.175
24	157.200	161.800	161.800
84	157.225	161.825	161.825
25	157.250	161.850	161.850
85	157.275	161.875	161.875
26	157.300	161.900	161.900
86	157.325	161.925	161.925
27	157.350	161.950	161.950
87	157.375	157.375	157.375
28	157.400	162.000	162.000
88	157.425	157.425	157.425
29	–	–	157.450
89	–	–	157.475
WX01	–	–	162.550
WX02	–	–	162.400
WX03	–	–	162.475
WX04	–	–	162.425
WX05	–	–	162.450
WX06	–	–	162.500
WX07	–	–	162.525
WX08	–	–	161.650
WX09	–	–	161.775
WX10	–	–	163.275

Note: Duplex channels are marked in grey.

Designation	Tx	Rx	Country
M	157.850	157.850	UK
M2	161.425	161.425	UK
31	157.550	161.150	Holland / Belgium
96	162.425	162.425	Belgium
L1/1L	155.500	155.500	Scandinavia
L2/2L	155.525	155.525	Scandinavia
L3/3L	155.650	155.650	Scandinavia (not Denmark)
F1/1F	155.625	155.625	Scandinavia
F2/2F	155.775	155.775	Scandinavia
F3/3F	155.825	155.825	Scandinavia

The supplementary table (see left) lists further channels, which may be fitted to your radio. These are only licensed for use in the countries indicated. No attempt should be made to use them in any other country.

NOTE

Ch 0 will only be made available in the UK to Coastguard users with written authorisation.

Channel 70 is the designated *Digital Selected Calling* (DSC) channel and may not be used for voice transmissions.

13.5 Troubleshooting

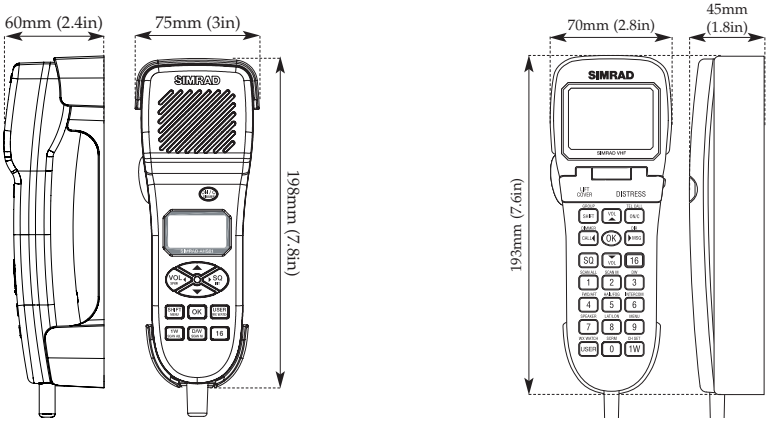
Symptom	Possible Cause	Remedy
Unit will not switch on	• Faulty connection to power • Fuse has blown • Supply voltage above limit	• Check power connection • Replace fuse and check power supply current • Check supply voltage is less than 15.6v
Scan or Memory Scan is locking on a channel without a signal	• Noise on the channel is holding the scan (see section 2.11.1)	• Increase squelch level • Inhibit channel from scan
Dual Watch not being entered	• Priority channel selected • Handset off cradle	• Select a working channel • Replace handset
Cannot change channel	• Dual Watch (D/W) engaged	• Exit Dual Watch
Certain channels are not obtainable	• Some channels are restricted and not programmed depending on country of purchase	• Consult your national authority for permitted channels in your region
Will not transmit	• Scanning or D/W function active	• Exit D/W or scan
Will not transmit on 25W but OK on 1W	• Low voltage when full transmitting current is drawn • Some channels are restricted to low power transmission only	• Check power supply • Consult your national authority
Transmissions persistently weak / display flashes **ANT**	• Damaged antenna • Antenna cable broken • Poor contact	• Replace antenna • Replace cable • Check antenna sockets & through deck connector

These simple checks should be carried out before seeking technical assistance and may save time and expense. Before contacting your servicing agent, please obtain the radio's serial number. The software iteration should also be quoted – this is shown in the large digits on the display for 2 seconds after the radio is turned on and should be written in the box below for future reference.

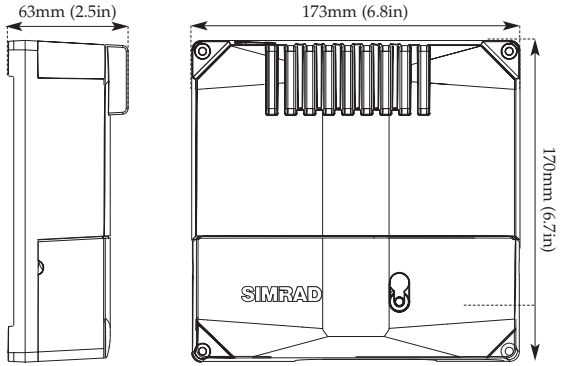
Serial Number: ……..

Software version: ……..

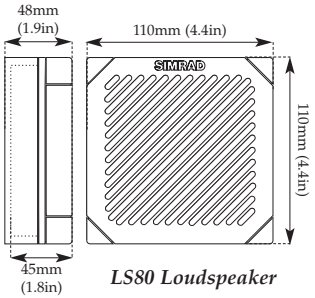
13.6 Dimensions



AHS81 & AHS82 handsets



RS81 Transceiver "black box"



LS80 Loudspeaker

13.7 Technical specification

Power supply . . . . . 12v DC (10.8v - 15.5v DC)
Channel capability . . . . . 55 international channel 1-28, 60-88 simplex & semi-duplex UK : includes M (previously 37) and M2 . . . . . USA : Wx 1-10 receive only . . . . . Scandinavia: Leisure or Fishing channels as appropriate . . . . . Canada: Canadian and USA channels
Private channels . . . . . Up to 16 private channels*
External speaker impedance 4Ω

** Contact your local Simrad Technical Dealer for further details of channel programming.*

Transmit

Frequency range 155-163Mhz
Power output . . . . . 1 watt or 25 watts
Current consumption . . . . . 5.5A (25 watts), 1.3A (1 watt)
Harmonic and spurious emissions . . . . . < 0.25µW
Hum/noise . . . . . < -40dB
Modulation . . . . . ±5kHz

Receive

Audio output power . . . . . 2 watts
Current consumption . . . 600mA (full volume, illumination on) . . . . . .220mA (fully squelched, illumination off)
Sensitivity . . . . . < 1µV emf for 20 dB SINAD
Harmonic and spurious emissions . . . . . < -2nW
Hum/noise . . . . . < -40dB
Adjacent channel selectivity 70dB
Intermodulation rejection 70dB

Environmental

Telephone handset (& loudspeakers) . . . . . Waterproof to IP67

13.8 Accessories & spares

AHK82
Active Handset Kit
(includes 20m cable)

AHK81
Active Handset Kit
(includes 20m cable)

The following spares and accessories are available from local Simrad agents. Please quote the relevant part number when ordering.

LS80	Spare station loudspeaker
EXBH05	5 metre extension cable (AHS81)
EXBH20	20 metre extension cable (AHS81)
EXAH05	5 metre extension cable (AHS82)
EXAH20	20 metre extension cable (AHS82)
EXAD00	Adapter cable to convert from RS81 to RS82 handset

13.9 Service & Warranty

Your radio should seldom need servicing, although it will benefit from an application of silicone or Teflon grease to the antenna and mic sockets each season. The equipment should be regularly checked by making routine calls to other stations.

On an annual basis test the Distress Alert button by pressing it ONCE. This will display the Distress Alert screen and ensure that the button is functioning. Press **ON/C** to return to the main screen – **DO NOT HOLD DOWN THE DISTRESS BUTTON**.

The unit is guaranteed for 2 years from date of sale. Should it become necessary to have the unit repaired, return it carriage prepaid to the agent in the country of purchase with a copy of the receipted invoice showing the date of purchase. Where possible return all the components, unless you are certain that you have located the source of the fault. If the original box is not available, ensure that it is well cushioned in packing; the rigours of freight handling can be very different from the loads encountered in the marine environment for which the unit is designed.

For Worldwide Warranty details, please refer to the Warranty Card supplied with this unit.

13.10 Declaration of Conformity

English	Hereby, **Simrad Limited (Margate)**, declares that this **RS81/82 VHF Radio** is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.
Finnish	**Simrad Limited (Margate)** vakuuttaa täten että **RS81/82 VHF Radio** tyyppinen laite on direktiivin 1999/5/EY oleellisten vaatimusten ja sitä koskevien direktiivin muiden ehtojen mukainen.
Dutch	Hierbij verklaart **Simrad Limited (Margate)** dat het toestel **RS81/82 VHF Radio** in overeenstemming is met de essentiële eisen en de andere relevante bepalingen van richtlijn 1999/5/EG.
French	Par la présente, **Simrad Limited (Margate)** déclare que ce **RS81/82 VHF Radio** est conforme aux exigences essentielles et aux autres dispositions de la directive 1999/5/CE qui lui sont applicables.
Swedish	Härmed intygar **Simrad Limited (Margate)** att denna **RS81/82 VHF Radio** står i överensstämmelse med de väsentliga egenskapskrav och övriga relevanta bestämmelser som framgår av direktiv 1999/5/EG.
Danish	Undertegnede **Simrad Limited (Margate)** erklærer herved, at følgende udstyr **RS81/82 VHF Radio** overholder de væsentlige krav og øvrige relevante krav i direktiv 1999/5/EF.
German	Hiermit erklärt **Simrad Limited (Margate)**, dass sich dieses **RS81/82 VHF Radio** in Übereinstimmung mit den grundlegenden Anforderungen und den anderen relevanten Vorschriften der Richtlinie 1999/5/EG befindet". (BMWi)
Greek	Με την παρουσα **Simrad Limited (Margate)** δηλωνει οτι **RS81/82 VHF Radio** συμμορφωνεται προς τις ουσιωδεις απαιτησεις και τις λοιπες σχετικες διαταξεις της οδηγιας 1999/5/ΕΚ.
Italian	Con la presente **Simrad Limited (Margate)** dichiara che questo **RS81/82 VHF Radio** è conforme ai requisiti essenziali ed alle altre disposizioni pertinenti stabilite dalla direttiva 1999/5/CE.
Spanish	Por medio de la presente **Simrad Limited (Margate)** declara que el **RS81/82 VHF Radio** cumple con los requisitos esenciales y cualesquiera otras disposiciones aplicables o exigibles de la Directiva 1999/5/CE.
Portuguese	**Simrad Limited (Margate)** declara que este **RS81/82 VHF Radio** está conforme com os requisitos essenciais e outras provisões da Directiva 1999/5/CE.

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