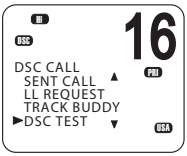
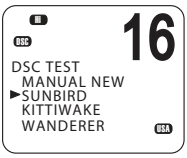
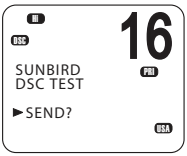
Sending a DSC test call

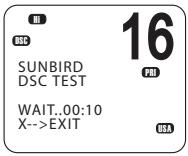


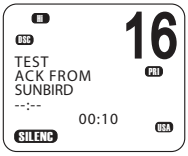




To make sure DSC is working correctly, you can send a test call to a buddy or any other station equipped with a DSC radio.

1. Select DSC MENU → DSC TEST.
2. Select a buddy from your buddy list, or select MANUAL NEW to enter the MMSI you want to call.
3. When the SEND prompt appears:
   - Press [OK] to send the request on CH70, or
   - Press [X] to exit without sending.
4. When you hear the acknowledgement alert tone:
   - Press the [SILENC] softkey to silence the alert.





5. If there is no reply within 30 seconds, the display shows: "SEND AGAIN?"

   You can then select:
   - [YES] to send again, or
   - [NO] to quit and return to standby mode.

→ ***Note:*** For information on receiving a DSC test call, see "Receiving a DSC test call" on page 61.

Receiving DSC calls

Several types of DSC calls can be received from vessels or coast stations within range:

Call type	Page
Distress	page 58
Individual	page 59
All ships	page 59
Group	page 60
Geographic	page 60
DSC test call	page 61

General process

When the radio receives a DSC call, it does several things as follows:

- Sounds the alert tone to notify you of the call.
- Displays a flashing icon on screen, which indicates that a call has been received and stored in the call log. When all call in the call log and distress log have been viewed, the icon stops flashing. For information on call logs, see "Calling using the call log" on page 50.
- Displays the MMSI (or name) of the calling station. You can press ▲ and ▼ to view more details of the call, including the requested working channel.
- For individual calls, displays "AUTO SWITCH" or "NO AUTO SW," depending on the INDIV REPLY setting. It will automatically or manually send an an acknowledgement to the calling radio and switch to the requested channel.
- For Group or All-Ships calls, displays "AUTO SWITCH" or "NO AUTO SW," depending on the Auto Switch setting.

  With Auto Switch set to ON, when receiving a Group or All-Ships call, the radio will automatically switch to the requested channel if not cancelled within 10 seconds. This might disrupt important communications that are already in progress on the current working channel. To avoid this, you can prevent the radio from automatically switching channel by setting the AUTO SWITCH option to OFF.

  For information on setting the auto switch option, see "Automatic channel switch options" on page 99.

  The procedures for receiving calls with Auto Switch either on or off are described below.

AUTO SWITCH

(For Group or All-ships calls with AUTO SWITCH set to ON)

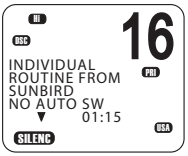
When the radio sounds the incoming DSC call alert:

1. Press the [SILENC] softkey to silence the alert.
2. To see more details about the call, including the requested channel, press ▲ or ▼.
3. You now have the following three options:
   - Press [ACCEPT] to switch to the requested channel immediately, or

- Do nothing to allow the radio to automatically switch after 10 seconds, or
- Press [X] to cancel the automatic switch and remain on the current channel.

4. When needed, press [PTT] to talk on the selected working channel.

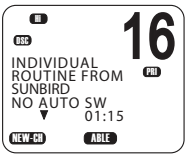
AUTO ACK

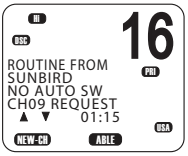


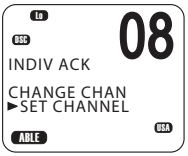
(For Individual calls with INDIV REPLY set to Auto)

When the radio sounds the incoming DSC call alert:

1. Press the [SILENC] softkey to silence the alert.
2. To see more details about the call, including the requested channel, press ▲ or ▼.
3. You can then use one of the following three softkeys:
   - [ABLE]
     Acknowledge the call on the requested channel.
     The radio will send the acknowledge signal and change to the designated channel.
   - [NEW-CH]
     Acknowledge the call, but request a different channel:
     - Press ▲ or ▼ to reach the channel you want to use, and then press the [ABLE] softkey.
       The radio will send a request for your preferred channel.







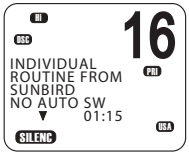
→ ***Note:*** AUTO ACK is not allowed in some EU countries.

- [UNABLE]
  Acknowledges the call, but signals that you are unable to use the requested channel. Note: this option is not available for ROUTINE calls. If INDIV REPLY is set to AUTO, the radio will automatically send an acknowledgement to the caller if there is no user intervention within 10 seconds.
- When needed, press [PTT] to talk on the selected working channel.

Receiving a DSC distress call

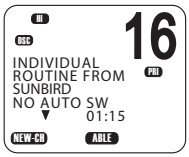
See "DSC Distress calls" on page 42.

Receiving a DSC individual call

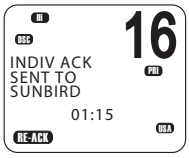


When the radio receives a DSC call, it sounds the alert tone for 2 minutes and displays the priority level and the calling MMSI (or buddy name).

1. Press the [SILENC] softkey to silence the alert.



2. Press ▲ or ▼ to view further information about the call, including the channel requested, or
   - Press [X] to exit without acknowledging.
3. Use the procedures described in "AUTO ACK" on page 58 to acknowledge the call, depending on your radio's INDIV REPLY settings.
4. The radio will send an acknowledge signal to the calling station.



   The radio displays the elapsed time since the incoming call (prior to acknowledgment); or the elapsed time since acknowledgement (after acknowledgment).
5. Press the RE-ACK softkey to send the acknowledgement at any time.
6. The caller should respond to your acknowledgement by making voice contact on the designated channel. If not, you can press PTT to initiate voice contact yourself.

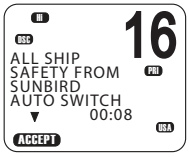
→ *Notes:*

- The call data is stored in your Call Log (see "Calling using the call log" on page 50).
- For information on sending a DSC individual call, see "Sending an individual DSC Call" on page 46.

Receiving a DSC all-ships call

When the radio receives a DSC call, it sounds the alert tone for 2 minutes and displays the priority level and the calling MMSI (or buddy name).

1. Press the [SILENC] softkey to silence the alert.



2. Press ▲ or ▼ to view further information about the call, including the channel requested, or
   - Press [X] to exit without acknowledging.
3. Use the procedures described in "AUTO SWITCH" on page 57 to acknowledge the call, depending on your radio's auto switch settings.

4. If appropriate, press PTT to talk on the currently displayed channel.

→ ***Notes:***

- The call data will be stored in your Call Log (see "Calling using the call log" on page 50).
- For information on sending a DSC all-ships call, see "Sending an all ships call" on page 49.

Receiving a DSC group call

When a DSC call is transmitted by one of the vessels in a group, all the radios that have the same MMSI entered will receive the message.

When the radio receives a DSC group call, it sounds the alert tone for 2 minutes and displays the priority level (ROUTINE for a group call) and the calling MMSI (or group name).

The radio may change to the requested channel depending on the AUTO SWITCH setting.

1. Press the [SILENC] softkey to silence the alert.
2. Press ▲ or ▼ to view further information about the call.
3. You do not need to send an acknowledgement.
4. If appropriate, press PTT to talk on the designated channel.

→ ***Notes:***

- The call data is stored in your Call Log (see "Call Logs" on page 49).
- For information on setting up your group MMSIs see "Creating a group MMSI" on page 96.
- For further information, see "Sending a group call" on page 48.

Receiving a DSC geographic area call

A geographic call is received by vessels within a specific geographic boundary area. The display shows the calling MMSI (or buddy name).

When you receive notification of a GEOGRAPHIC call:

1. Press the [SILENC] softkey to silence the alert.
2. Press ▲ or ▼ to view further information about the call, including the channel requested.
3. Listen to the working channel for an announcement from the calling station.

Receiving a response to a DSC LL request

When you receive GPS data from a buddy in response to your LL request you should make a written note of the position.

1. Press [SILENC] softkey to silence the alert.
2. Press ▲ or ▼ view further information about the call.
3. When finished, press [X].

→ ***Notes:***

- To send an LL request, see "Sending an LL request for the position of a buddy" on page 52.
- LL request data is not stored on the RS90S.

Receiving a DSC test call

You can set up the radio to respond to incoming DSC TEST calls with an automatic response or manual response. To change the option, see "Setting up DSC test reply" on page 100.

Manual response

1. On receiving a DSC test request, the radio sounds a two-tone alert.
2. Press the [SILENC] softkey to silence the alert.
3. Press the [ACK] softkey to acknowledge the DSC Test Call.

Auto response

On receiving a DSC test request, the radio automatically replies after a 10 second delay with an ACK signal.

ATIS

EU models only.

The Automatic Transmitter Identification System (ATIS) is mandatory for vessels navigating on some European waterways. The system allows authorities to monitor and regulate VHF radio communications by identifying any vessel that makes a VHF transmission. Each vessel is required to have an ATIS-enabled radio on board and is allocated a unique ATIS Maritime Mobile Service Identity (MMSI).

Each time a radio operator finishes talking and releases the PTT key, the radio transmits a short digital message, which includes the ATIS MMSI. The receiving station can then look up details of the vessel, saving time in communication on the busy VHF channels.

Unlike DSC, the ATIS signal is transmitted on the same VHF channel as the voice transmission.

Before you can enable ATIS, you must enter the ATIS MMSI. See "Entering or checking your ATIS MMSI" on page 97.

Before you can enable ATIS, DSC must be turned off. See "Enabling DSC functionality" on page 98. To enable ATIS, see "Enabling ATIS functionality" on page 97.

➔ ***Notes:***

- ATIS is disabled in US models.
- When ATIS is enabled, the ATIS icon appears on screen.
- In some European countries SCAN functionality is limited, and, if ATIS is enabled, the 3CH SCAN and Dual scan modes will be disabled.

6 AIS procedures

The marine Automatic Identification System (AIS) is a vessel location and information reporting system. It allows vessels to automatically share information such as position, speed, course and identity via a VHF radio link.

The received details of nearby vessels can be displayed on the handset screen together with closest point of approach times and distances. These details are also sent to the NMEA ports for display on a chart plotter if one is connected.

Closest point of approach (CPA) is the calculated closest distance between your vessel and a target vessel based on the current speed and course.

Time to closest point of approach (T/CPA) is the calculated time for a target vessel to arrive at the closest point of approach based on the current speed and course. If the radio detects that another vessel will come closer than the set CPA distance and within the set T/CPA time, the CPA alarm will sound. Both conditions must be met for the CPA alarm to sound.

For information on enabling AIS and setting the CPA time and distance criteria, see "AIS Setup" on page 102.

For general information about AIS, see "Appendix 5 - AIS information" on page 113.

For information on how to configure your chart plotter or software to make use of the RS90S AIS data, see the manual provided with that product.

→ ***Notes:***

- Before the AIS functions can be used, the RS90S must receive its own position from a GPS device, or manually entered data.
- The RS90S VHF radio includes an AIS receiver but does not transmit.

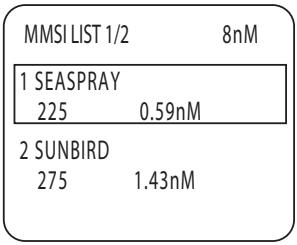
To access the AIS displays:

- Press [AIS]
- Repeat press [AIS] to switch between the three available displays:
  MMSI list (list of nearby vessels)
  PPI display
  T/CPA list

From any of the above displays, you can select an MMSI to display details about the particular vessel.

List of nearby vessels

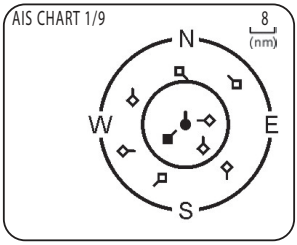
The MMSI list displays a list of vessels within VHF range. As in below example, the list is arranged in ascending order; closest first.



Each vessel's MMSI (or name, depending on AIS setup) will be displayed, together with its bearing and distance from your position.

PPI display

The Plan Position Indicator (PPI) shows the geographical location of AIS targets with respect to your position, which is represented in the centre of the circular display. See example below:



Symbols

- The solid circle in the middle is your vessel.
- Hollow diamonds represent vessels that are within the current zoom distance.
- The solid diamond is the selected target vessel.
- The tails represent course over ground.

→ ***Note:*** Units on the PPI display are always nautical miles.

To zoom in or out:

- Press [3CH] to zoom in.
- Press [Scan] to zoom out.

Scales available are 1nm / 2 nm / 4 nm / 8 nm / 16 nm / 32 nm.

T/CPA screen

The Time and Closest Point of Approach (T/CPA) screen shows the closest point of approach settings together with a list of vessels that will approach within those criteria.

- CPA alert distance is set up in MENU ⟶ AIS SETUP ⟶ CPA. (See "Setting up the CPA distance" on page 103.)
- T/CPA alert time is set up in MENU ⟶ AIS SETUP ⟶ TCPA. (See "Setting up the T/CPA time" on page 104.)

The approaching AIS target's details will be listed on the left of the screen.

Once the vessel is within alert distance (CPA) and time (T/CPA), it will be placed in the T/CPA list.

The alert sounds for every vessel within the criteria every time their AIS signal is received.

T/CPA APPROACH

1/ 9 05:00min 8 nM

- In the example above, the criteria are: 5:00 min and 8 nM.

➔ ***Notes:***

- The scale on the T/CPA Approach screen is automatically set to the optimum for the selected target. You cannot zoom in or out on this screen.
- If the radio detects a T/CPA or CPA breach, the T/CPA Approach screen will automatically popup with an alert tone. Press [X] to stop the alert; otherwise, the alert will sound again after 1 minute.

AIS target information

From one of the AIS screens, you can display available detailed information about a target vessel:

1. Press ▲ or ▼ to highlight the required target. (Hold down ▲ or ▼ to scroll rapidly.)
2. Press [OK] to view full details of the selected target, including (as an exmple):
   - NAME:
     MMSI:
     TCPA: 4:39s
     CPA: 0.59nM
     WIDTH: 26.0m
     LENGTH: 158.0m
     RECEIVED: 0m33s
     CALL SIGN: MYHV6
     DRAUGHT:
     DIST: 1.01nM
     IMO:
     BEAR: 155'
     HEADING:
     ROT: 725.6'/min
     SOG: 0.0KTS
     COG: 0.0' 55'51.240'N, 012'49.991'E
     TYPE: CARGO
     NAV STATUS: NOT DEFINED

   The display alternates between the first and next page every 5 seconds.
3. When finished, press [X] to exit.

7 Installation

Checklist

The following items are included in the RS90S radio package:

RS90S VHF radio transceiver

- RS90S transceiver unit
- 2 m power supply cable
- 8-pin terminal connector x4
- 2-pin terminal connector x2
- Spare 10 A fuse
- Cable retaining bracket with cable ties and mounting screws
- Transceiver fasteners:
  - M3.5 x 28 mm machine screw x4
  - M3.5 hex nut x4
  - Flat washer x4

Wired handset

- HS90 wired handset with cradle
- 5 m handset connector cable, including mid-cable connector.
- Flush mounting plate for handset connector cable socket
- Silicon cover for cable connector
- Handset fasteners:
  - M3.5 x 15 mm self-tapping screw x2 (cable mounting plate)
  - M3.5 x 10 mm self-tapping screw x2 (top holes)
  - M3.0 x 40 mm self-tapping screw x1 (bottom hole)
  - M3.0 x 40 mm machine screw x1 (bottom hole)
  - M3.5 x 28 mm machine screw x2 (top holes)
  - M3.5 nut x2
  - M3.0 nut x1
  - Assorted spring washers and flat washers

External speaker unit

- External speaker (with 5 m cable)
- Foam gasket (for flush mounting)
- Plastic speaker surface mount box
- Speaker fasteners:
  - M3 x 10 mm self-tapping screw x4 (speaker only)
  - M3 x 10 mm machine screw x4 (speaker only)
  - M3 x 40 mm self-tapping screw x4 (speaker and surface mount box)
  - M3 x 40 mm machine screw x4 (speaker and surface mount box)
  - M3 nut x8
  - Spring washer x8
  - Flat washer x8

Documentation

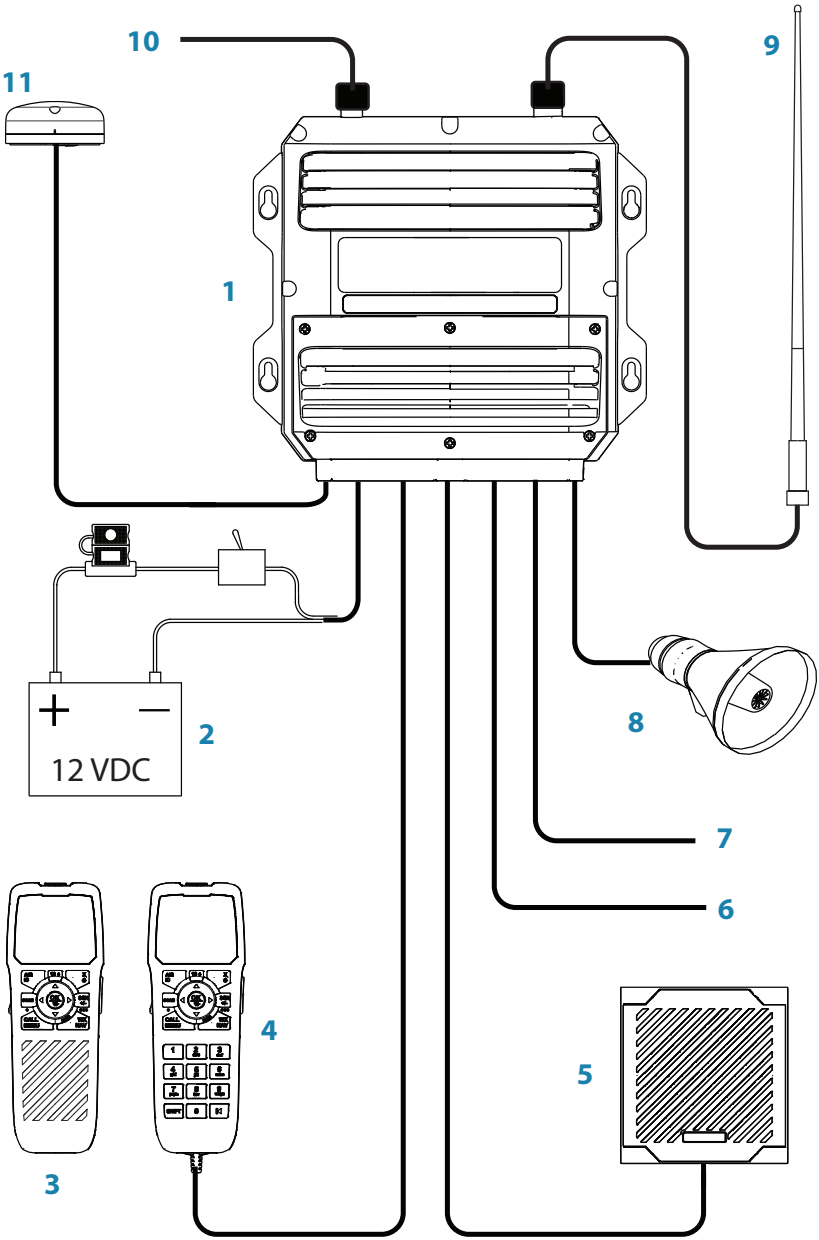
- User Manual
- Warranty Card

→ ***Note:*** A VHF antenna is not provided by Simrad. An antenna with a PL259 plug is required. Consult your Simrad dealer for advice if required.

System diagram legend

1	RS90S VHF radio transceiver
2	12 VDC fused power supply
3	HS35 wireless handset (optional - maximum 2 handsets)
4	HS90 wired handset (maximum 4 handsets)
5	External loudspeaker (maximum 4 speakers)
6	NMEA 0183 GPS network connection
7	AIS Data output
8	Loud hailer speaker (optional)
9	VHF antenna with PL259 connector
10	NMEA 2000 network connection
11	External GPS Antenna (optional)

System overview diagram



Positioning

⚠	**Caution:** Under extreme operating conditions, the temperature of the rear heat-sink on this radio may reach a surface temperature that is unsafe to touch. Caution is advised to prevent possible skin burns.

RS90S VHF radio transceiver

Make sure that the position of the transceiver:

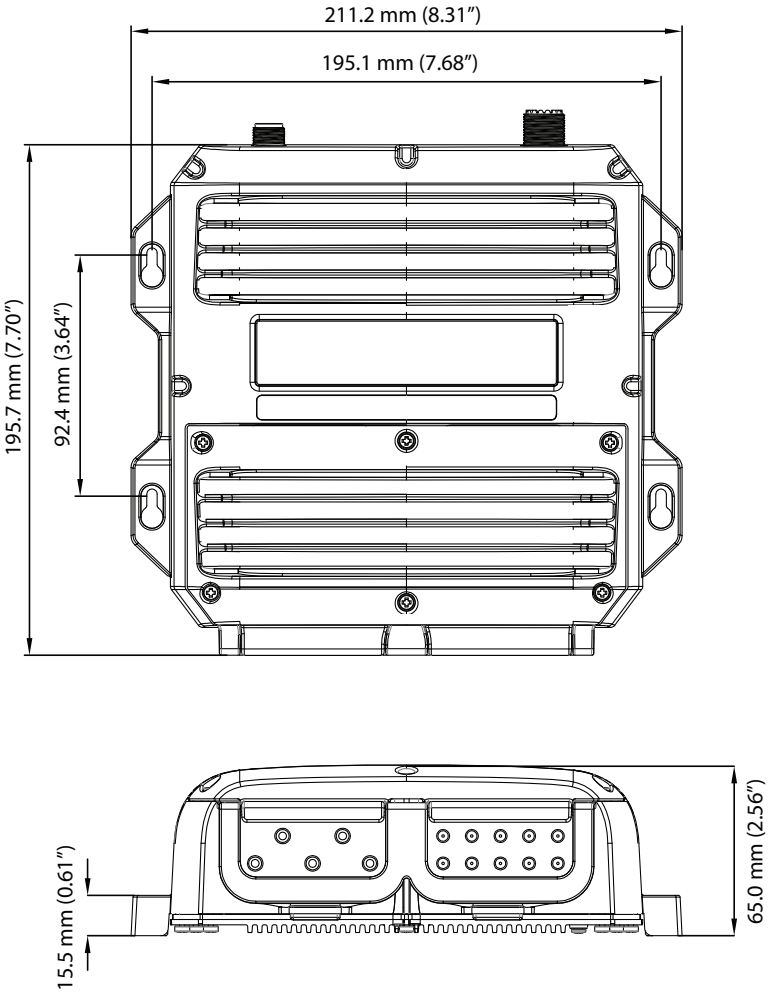
- Is at least 1 m (39 inches) from the VHF antenna.
- Allows easy connection to the 12 VDC electrical source, the antenna, and the NMEA 2000 connection.
- Is at least 45 cm (18 inches) from any magnetic compass to avoid magnetic deviation of the compass during radio operation.
- Provides suitable space for installing the wired handset cradle(s) nearby. (A 20 m extension cable is available as an optional extra.)
- Provides reasonable access to the wiring via the top panel.

The transceiver can be positioned vertically on a bulkhead or horizontally. Avoid positions that might get wet or hot, such as in the engine compartment or close to the bilge.

Ideally, the transceiver is positioned vertically with the wiring glands facing downwards in order to prevent the ingress of water.

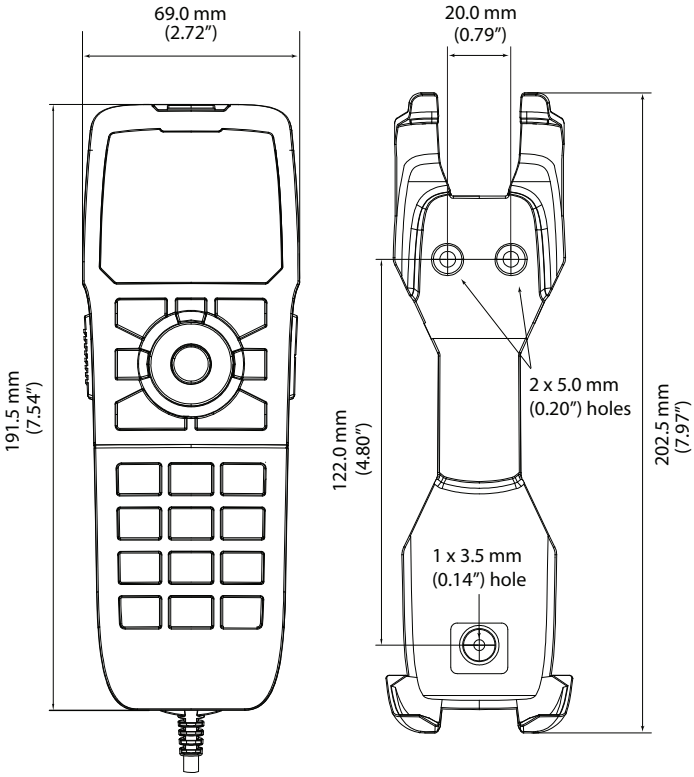
Installing the transceiver

1. Hold the transceiver at the chosen location and mark the 4 hole positions onto the mounting surface.
2. Drill the 4 holes where marked with a drill bit suited to the selected mounting fasteners.
3. Attach the transceiver using the supplied self-tapping screws or machine screws.



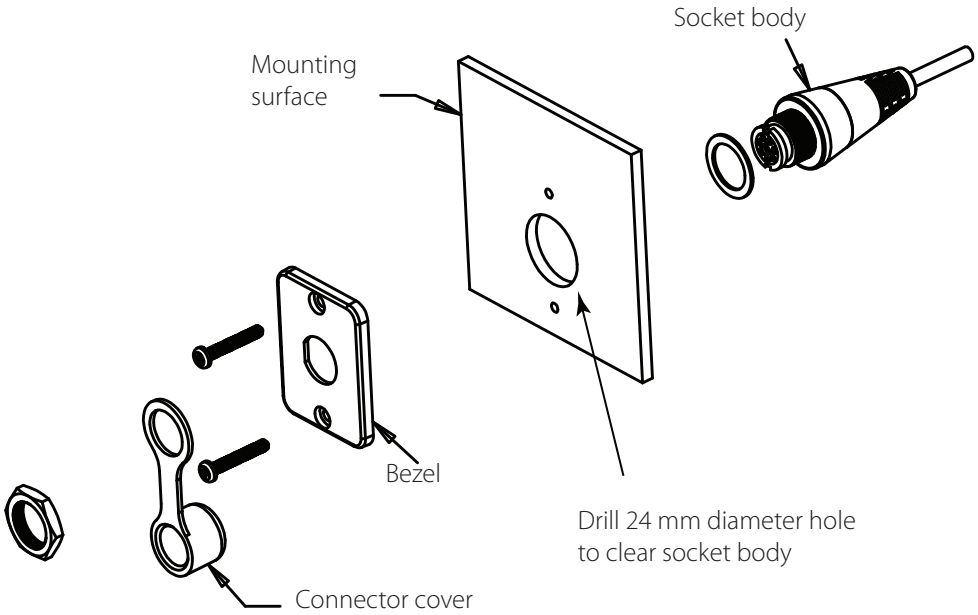
Installing a wired handset cradle

This is the same as installing a wireless handset cradle with the exception that no wiring is required. See "Installing a wireless handset cradle" on page 74.



Installing a handset cable connector

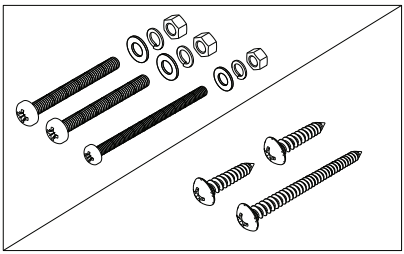
Each wired handset cable includes a connector assembly that must be installed in a bulkhead, dashboard or other suitable panel.

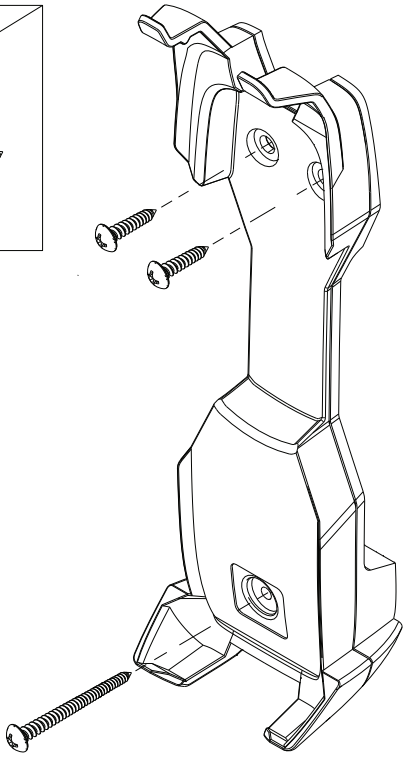


Installing a wireless handset cradle

The wireless handset has a cradle that incorporates inductive charging for the rechargeable battery.

1. Choose a suitable location that provides sufficient room for the handset to fit securely in the charging cradle.
2. Hold the cradle at the chosen location and mark the positions of the fastening holes and the wire hole onto the mounting surface.
3. Drill the holes where marked with a drill bit suited to the selected mounting fasteners.
4. Feed the wire through the wire hole. If mounting outside, apply a suitable sealant or fit a cable gland.
5. Attach the handset cradle using the supplied self-tapping screws or pan head machine screws.
6. Connect the wire to a 12 VDC source via a 1 A fuse:
   - Red wire to 12 VDC positive
   - Black wire to negative.

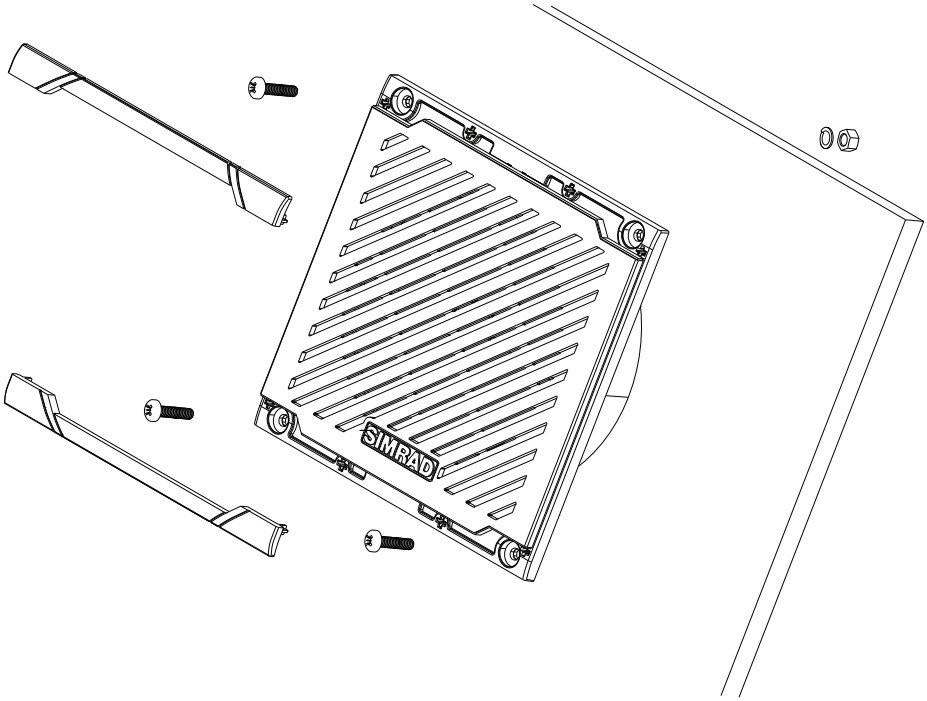




External speakers installation options

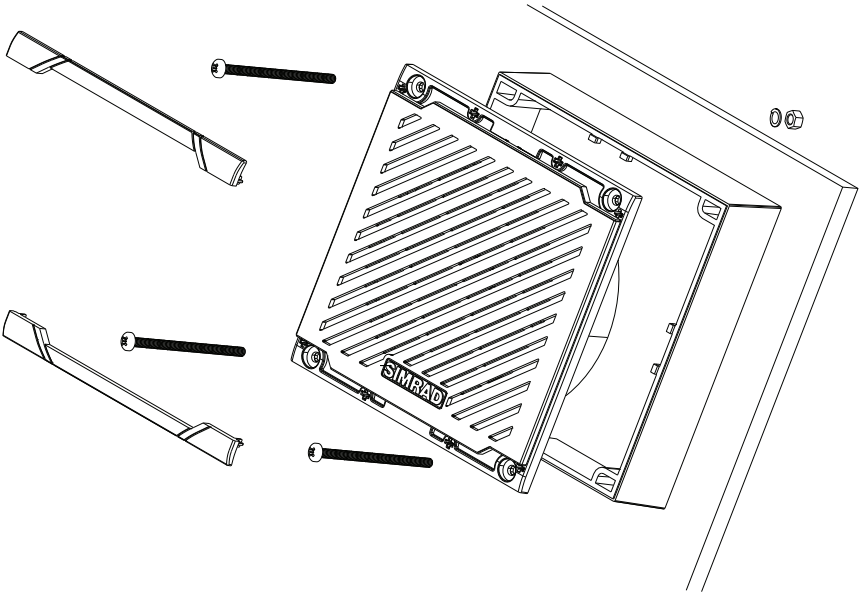
Flush mount option

1. Fit the foam gasket to the rear of the speaker and remove the plastic trims that cover the screw holes.
2. Cut a 92 mm (3 5/8") diameter hole in the mounting surface, allowing space for the speaker's overall dimensions.
3. Temporarily fit the speaker and mark the four screw holes.
4. Drill holes of appropriate size for fasteners to be used.
5. Fit the speaker and secure with a small amount of sealant applied to the fasteners.
6. Refit the plastic trim piece.



External speaker - surface mount option

1. Position the surface mount box at desired location and mark the four screw holes through the corner tunnels. Make sure the drain hole in box is oriented to be at lowest side.
2. Drill holes of appropriate size for fasteners to be used.
3. Remove the plastic trims that cover the screw holes on speaker front.
4. Drill a hole in the mounting surface for the speaker wire, ensuring hole is near one of the corner screw holes, to prevent cable pinching under speaker.
5. Feed speaker wire through surface mount box and through mounting surface hole.
6. Apply sealant to the cable and around hole.
7. Fix the speaker with fasteners through it and the box, ensuring the logo on speaker and drain hole in box are aligned.
8. Replace the plastic trims.



Transceiver external connectors

Connector 13 - VHF antenna

A suitable radio antenna (not supplied) must be mounted and connected with a PL259 connector before you can operate the radio. Consult your Simrad dealer for advice, if necessary.

Always mount the VHF antenna as high as possible and at least 1 m (39 inches) from the transceiver.

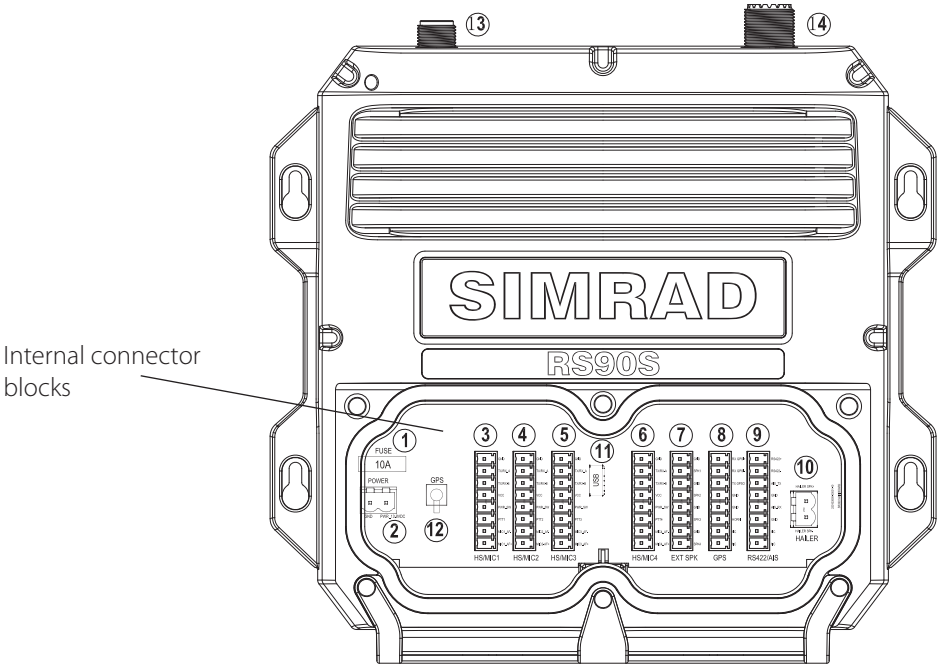
Connector 14 - NMEA 2000 (N2K) connector

The RS90S radio can be connected to an NMEA 2000 network using a cable (not supplied). For further information, see "NMEA 2000 Network" on page 83.

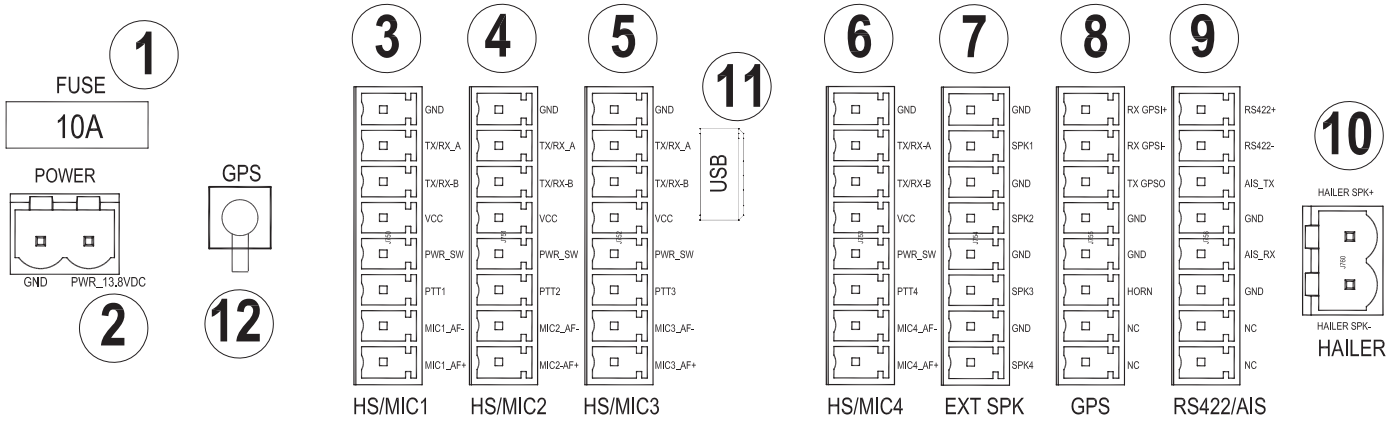
→ ***Note:*** A GPS source is required to enable full functionality of DSC calling, especially DISTRESS calls.

Transceiver internal connectors

To access the internal connectors, remove the cover plate by unscrewing the captive screws. The connectors are on the internal circuit board, which is located as shown below.



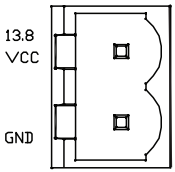
Transceiver internal connector numbering



Connector 1 - Fuse

Install a 10 Amp MINI® blade fuse.

Connector 2 - Power connection

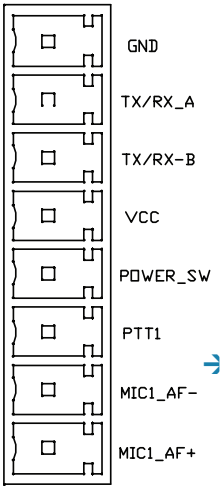


Label	Wire colour
VCC	Red
GND (Negative)	Black

Notes:

- Voltage: 12 VDC (10.8 VDC to 15.6 VDC)
- 2 m twin-core power cable is supplied
- If you need to shorten the power cable, ensure that the two ferrite cores are moved and installed on the shorter cable.

Connectors 3, 4, 5 and 6 - Wired handsets

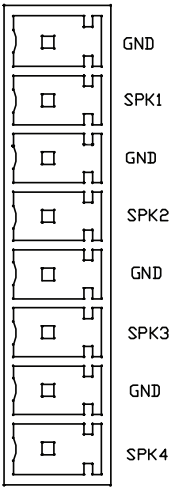


Number	Label	Wire colour
1	GND	Black
2	TX/RX_A	Blue
3	TX/RX_B	Green
4	VCC	Red
5	POWER-SW	White
6	PTT	Grey
7	MIC_AF-	Yellow
8	MIC_AF+	Orange

Notes:

- All the necessary wires are included in the handset cable supplied.
- The wired handset cable includes a connector assembly that must be installed in a bulkhead, dashboard or other suitable panel.

Connector 7 - External speakers

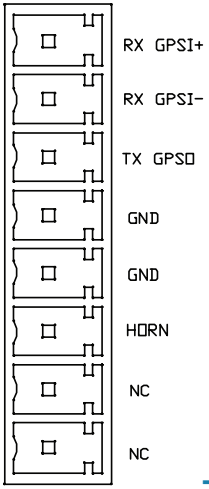


Number	Label	Wire colour
1	GND	Black
2	SPK1	Red
3	GND	Black
4	SPK2	Red
5	GND	Black
6	SPK3	Red
7	GND	Black
8	SPK4	Red

Notes:

- You can connect a (minimum) 4W,8 Ω or an 8W,4 Ω speaker to each pair of speaker terminals.
- Speakers are supplied pre-terminated with 5 m twin-core cable (red/black).

Connector 8 - GPS Input - NMEA 0183 (4800 bps), and Horn button connections

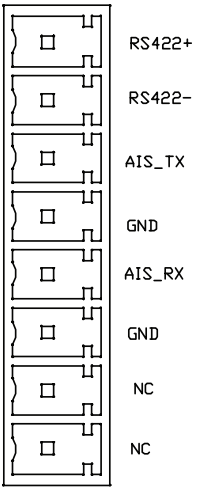


Number	Label	Description
1	RX GPS+	NMEA 0183 Input+ Balanced, RS-422, GPS data input
2	RX GPS-	NMEA 0183 Input- Balanced, RS-422, GPS data input
3	TX GPSO	NMEA 0183 Output+ Connect to ship's NMEA 0183 input
4	GND	NMEA 0183 Output- Single end, GND
5	GND	Wire to horn button
6	HORN	Wire to horn button
7	-	Not connected
8	-	Not connected

Notes:

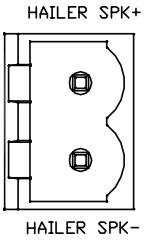
- Use a normally-open horn button.
- A GPS source is required to enable full functionality of DSC calling, especially DISTRESS calls.

Connector 9 - AIS Output
NMEA 0183 (38400 bps)



Number	Label	Description
1	RS-422+	Output+ (RS-422 type) AIS RS-422 data output only
2	RS-422-	Output- (RS-422 type)
3	AIS_TX	Output+ (RS-232 type) Connect to PC or chart plotters
4	GND	Output- (RS-232 type)
5	AIS_RX	Not used
6	GND	Not used
7	-	Not connected
8	-	Not connected

Connector 10 - Loud hailer speaker



Number	Label	Description
1	HAILER SPK+	
2	HAILER SPK-	

Important: Do not short circuit these 2 pins, as it may cause damage to the radio.

Install the hailer speaker in a forward-facing location on the boat. This is because, in addition to transmitting foghorn sounds, the hailer speaker 'listens back' when not transmitting.

→ ***Note:*** Use a 4-8 ohm speaker or loud hailer horn rated at no less than 30 W. Higher impedance will reduce audio output volume.

Connector 11 - Programming connector

This is a Micro-USB receptacle used for factory diagnostic purposes.

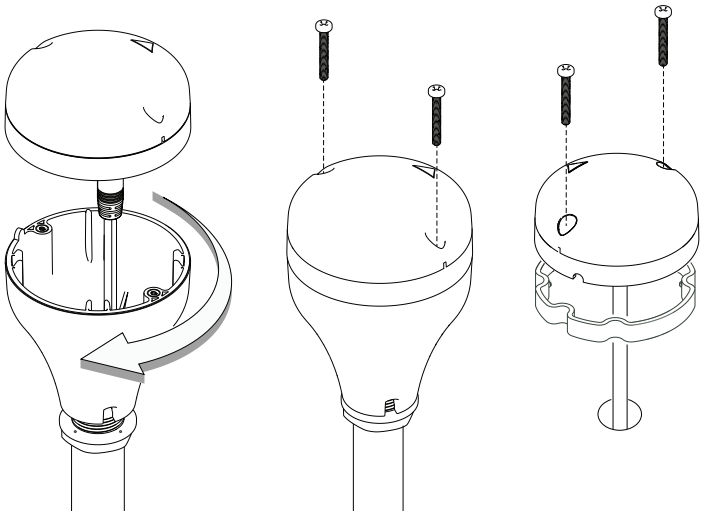
Connector 12 - External GPS Antenna connector

Install the external GPS-500 Antenna (optional)

It is not recommended that the GPS antenna is mounted up a mast where the motion of the vessel will cause the antenna to swing and potentially reduce the accuracy of the GPS position.

Also, do not mount the antenna in the direct path of a radar transmitter.

Mount the GPS-500 to either a pole or hard surface then run the cable to the transceiver. In all cases, ensure the selected location enable the antenna to have a clear, unobstructed view of the sky.



To **pole mount** the external GPS-500 antenna, you will require a 1-inch 14 TPI thread pole:

- Screw the pole adapter onto the threaded portion of the pole.
- Feed the cable attached to the GPS antenna through the adapter and pole.
- Mount the pole into position.
- Fit the GPS antenna to the pole adapter using the 2 small screws.

To **surface mount** the external GPS-500 antenna, select a flat clean surface area that has a clear view of the sky. Mount the antenna using the supplied gasket and the 2 small screws:

- Mark and drill the 2 mounting holes and a further hole if necessary for the GPS cable.
- Install the gasket by firstly threading the attached cable through the centre of the gasket.
- Screw the GPS antenna to the mounting surface.

➔ ***Note:*** Ensure the surface mounting area is clean with no dirt, old paint or debris.

- Run the GPS cable to the transceiver:
- Route the cable to your VHF transceiver unit, adding any necessary extension cables.
- Connect the cable from the GPS antenna to the GPS connector (SMA) on the VHF transceiver as shown in page 77.

Setting up the radio

➔ ***Note:*** You must enter your User MMSI before the DSC functions of this radio will work.

For full setup details, see the Setup section in chapter 8.

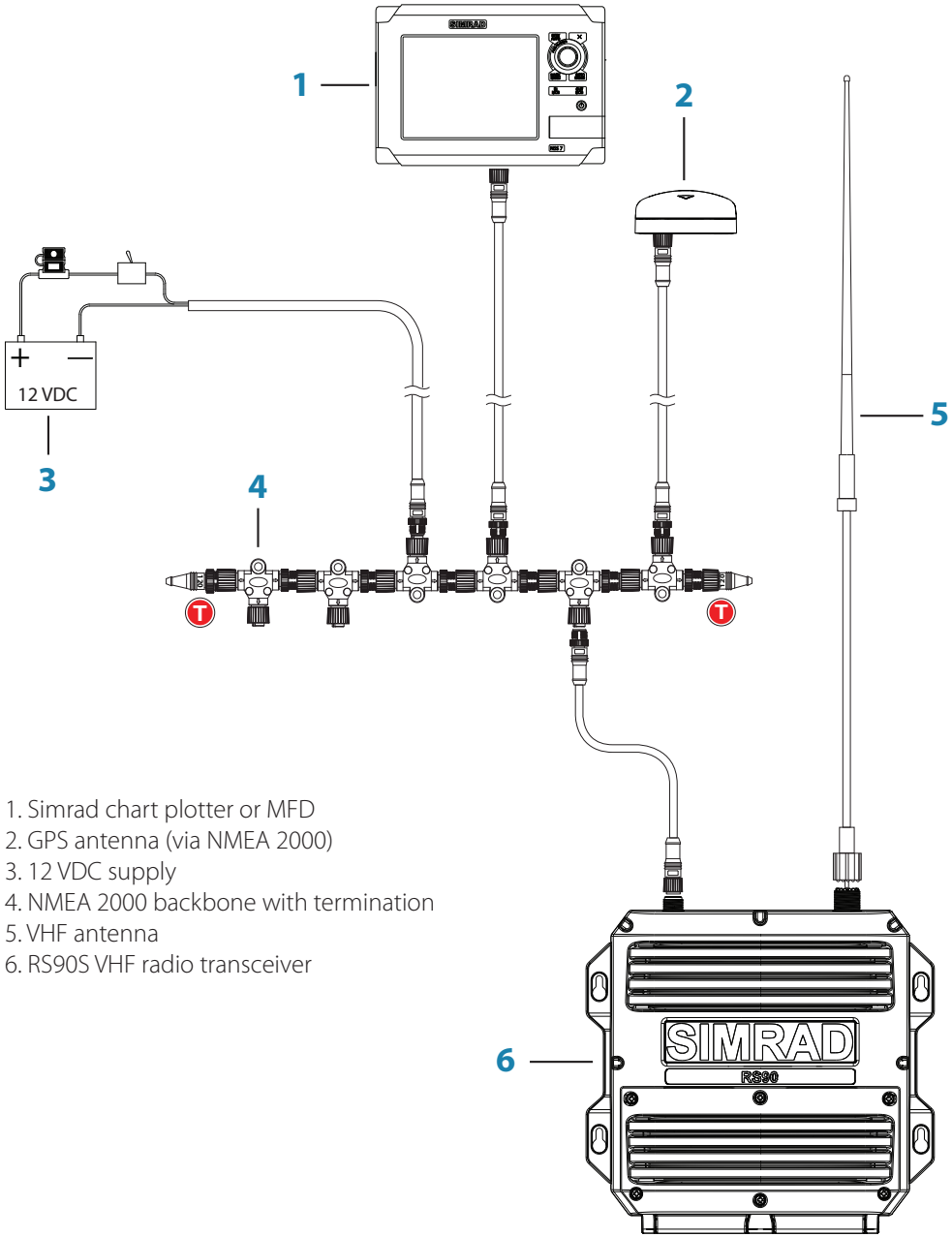
NMEA 2000 Network

The radio can be connected to an NMEA 2000 network using an NMEA 2000 compliant cable (not supplied).

➔ ***Notes:***

- The NMEA backbone must be terminated at each end.
- The 'drop' cable to each device must not exceed 6 m.
- Further information on NMEA 2000 is available on the Simrad website.

NMEA 2000 Network Diagram

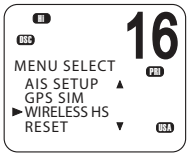


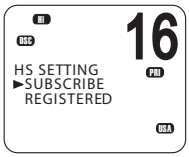
1. Simrad chart plotter or MFD
2. GPS antenna (via NMEA 2000)
3. 12 VDC supply
4. NMEA 2000 backbone with termination
5. VHF antenna
6. RS90S VHF radio transceiver

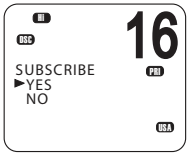
8 Setup

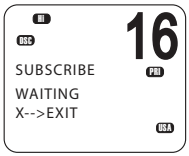
Wireless handset setup

Subscribing a wireless handset









At installation time, wireless handsets need to be registered in the RS90S transceiver. Once registered, a handset automatically connects to the transceiver when both are switched on. For information about operating the handsets, see "Handsets" on page 12.

1. Make sure the wireless handset is charged and turned OFF.
2. Make sure any other wireless handsets are also turned OFF.
3. On the wired handset, Select MENU → WIRELESS HS → SUBSCRIBE.
4. Select YES. The radio will display WAITING.
5. Turn on the wireless handset. The display will show SEARCHING.
6. Press and hold the [SCAN] on the wireless handset until the display shows REGISTER.

   The display will soon show CONNECTING, and then the handset will be registered in the transceiver.

Unsubscribing a wireless handset

To delete an already registered handset:

1. Select MENU → WIRELESS HS → REGISTERED.
2. Select the handset you wish to remove.
3. Select CLEAR <handset name>.
4. Select YES.

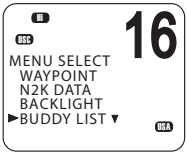
Buddy list setup

The buddy list stores up to 20 contact names and MMSIs. Contact names are stored in the order of entry, with the most recent entry shown first.

Once set up, you can use the buddy list to:

- DSC call an individual buddy; see "Sending an individual DSC Call" on page 46.
- DSC request location of a buddy; see "Sending an LL request for the position of a buddy" on page 52.
- DSC track selected buddies; see "Tracking a buddy - introduction" on page 53.
- DSC Test call; see "Sending a DSC test call" on page 56.

Add a new buddy

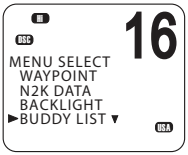


You can enter a maximum of 20 buddy names.

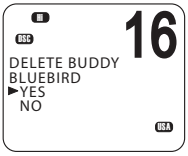
1. Select MENU → BUDDY LIST → MANUAL NEW.
2. Enter the buddy name, one character at a time up to a maximum of 11 alphanumeric characters.
3. Press [OK] repeatedly if necessary until the cursor moves to the MMSI entry line.
4. Enter the MMSI number associated with the buddy name, then press [OK] repeatedly until STORE/CANCEL is displayed.
5. Scroll to STORE or CANCEL as required and then press [OK].

→ ***Note:*** When the buddy list is full, you cannot make a new entry until you have deleted an existing entry.

Edit or delete a buddy name



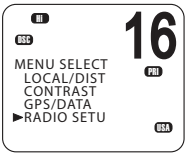
1. Select MENU → BUDDY LIST.
2. Scroll to the required entry and press [OK].
3. To edit the buddy, select EDIT, and then:
   - Edit the buddy name, or
   - To edit only the MMSI, press [OK] repeatedly until the cursor moves to the MMSI line.
   - When finished editing, press [OK] repeatedly if necessary until STORE/CANCEL appears.
   - Scroll to STORE or CANCEL as required and then press [OK].

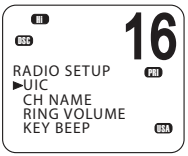


To delete a buddy:

- Select DELETE at step 3, and then YES. The buddy will be deleted from the list immediately.

Radio setup





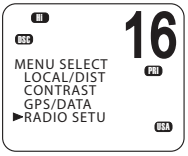
UIC

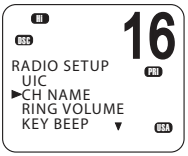
US and AUS models only.

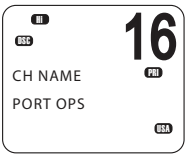
This option allows you to switch between USA, International, or Canadian channel banks. The selected channel bank is displayed on the LCD along with the last used channel. For details of channel banks, see "Appendix 7 - Channel charts" on page 119.

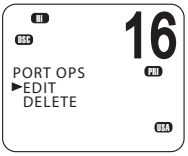
1. Select MENU → RADIO SETUP → UIC.
2. Select the desired channel bank then press [OK].

Editing channel names









If a channel has been assigned a name, the name appears next to the channel number on the standby screen. You can edit or delete the channel names.

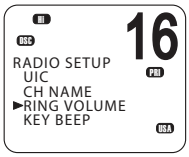
A list of default channel names is given in "Appendix 7 - Channel charts" on page 119.

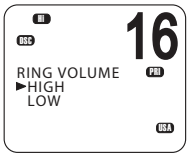
1. Select MENU → RADIO SETUP → CH NAME.
2. Use ▲ and ▼ to scroll to the one you want to change then press [OK].
3. Select EDIT.
4. Enter the new name over the existing one.
5. Press [OK] repeatedly if necessary to display the YES/NO confirmation.
6. Scroll to YES or NO as required and press [OK].

To delete a channel name:

Use a similar procedure to the above, but select DELETE at step 3.

Ring volume

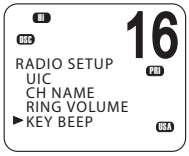


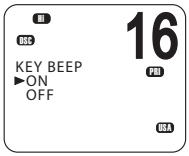


The radio sounds a two-tone alert when it detects an incoming DSC call. You can change the volume level.

1. Select MENU → RADIO SETUP → RING VOLUME.
2. Scroll to HIGH or LOW as required, then press [OK].

Key beep



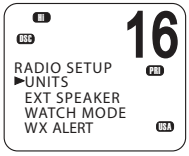


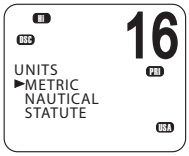
You can change the key beep volume or turn the key beeps off completely.

1. Select MENU → RADIO SETUP → KEY BEEP.
2. Scroll to the required setting: ON or OFF, then press [OK].

→ ***Note:*** The key beep setting is separate for each handset.

Units



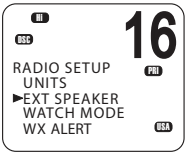


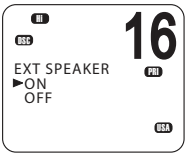
You can select your preferred measurement units for distance and cross-track error (for waypoint navigation).

1. Select MENU → RADIO SETUP → UNITS.
2. Scroll to the required measurement units: METRIC, NAUTICAL or STATUTE, then press [OK].

→ ***Note:*** Nautical Miles is the only unit available in AIS mode.

External speaker

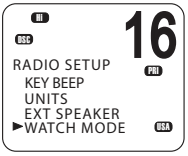


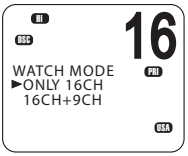


You can switch the external speaker ON or OFF.

1. Select MENU ⟶ RADIO SETUP ⟶ EXT SPEAKER.
2. Scroll to ON or OFF as required, and then press [OK].

Setting the priority channel





US model only.

If you are operating on the USA or Canadian channel banks, you can set the radio to scan CH16 and CH9 as well as the working channel.

1. Go to menu option RADIO SETUP ⟶ WATCH MODE.
2. Select one of the two options:
   - 16CH to enable Channel 16 only, or
   - 16CH+9CH to enable both Channel 16 and Channel 9.

This setting affects Dual Watch and Tri watch modes.

When watch mode is only channel 16:

- The [16/9] key switches to channel 16.
- Short press [SCAN] enters dual-watch mode.
- Long press [SCAN] scans all available channels.

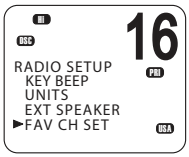
When watch mode is channel 16 and channel 09:

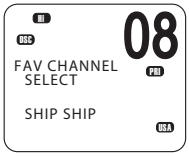
- Short press the [16/9] key switches to the current priority channel.
- Long press the [16/9] key toggles the priority channel between CH16 and CH09.
- Short press [SCAN] enters tri-watch mode.
- Long press [SCAN] scans all available channels.

For further information, see:

- "Priority channels" on page 21.
- "Dual watch scan" on page 31.
- "Tri watch scan" on page 32.

Setting up a favourite channel





Non-US models only.

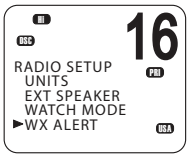
The WX key can be programmed to a channel of your choice so that you have quick access to that channel. For further information, see "Favourite channel (non-US models)" on page 28.

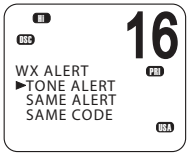
1. Select MENU → RADIO SETUP → FAV CH SET.
2. Use the ▲ and ▼ keys to select the required channel, and then press [OK].

→ ***Notes:***

- For US models, the WX key has a different purpose. See "Receiving weather alerts (US model only)" on page 27.
- You can store just one favourite channel.

Setting up weather tone alert





US model only.

1. Select MENU → RADIO SETUP → WX ALERT → TONE ALERT.
2. Select ON or OFF as required.

Tone alert ON.

- If an alert tone is broadcast from the NOAA weather station, the weather alert is picked up automatically and the alarm sounds. Press any key to cancel the alarm and to hear the weather alert message.
- The Weather alert symbol will be displayed on screen to show that the weather alert tone setting is on.

Weather alert symbol: 

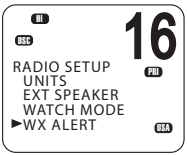
Tone alert OFF

With this setting, the radio ignores weather alerts.

Setting up SAME alert

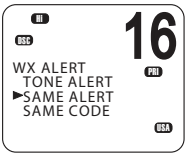
US model only.

→ ***Note:*** SAME ALERT works only after you have entered and selected a SAME code for your geographic area (see "Entering a SAME code" on page 92).

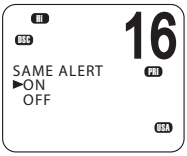


For usage, see "Receiving SAME alerts (US model only)" on page 27.

1. Select MENU → RADIO SETUP → WX ALERT → SAME ALERT.
2. Select On or OFF as required.



→ ***Note:*** SCAN mode will operate up to 50% more slowly when SAME ALERT is ON to allow time to decode the special warning code transmissions.



SAME alert ON

- The radio will receive any local NWR or EAS alerts.
- The SAME icon will be displayed on screen to show that the SAME alert setting is on.

SAME alert OFF

With this setting, the radio ignores SAME weather alerts.

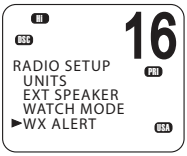
Entering a SAME code

US model only.

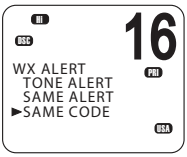
Before you can receive SAME weather alerts, you must enter and then select a SAME code for your geographic area into the radio.

To find the SAME codes for your geographic area:

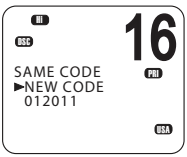
- Telephone 1-888-NWR-SAME (1-888-697-7263), or
- Visit www.nws.noaa.gov/nwr/indexnw.htm



1. Select MENU → RADIO SETUP → WX ALERT → SAME CODE.

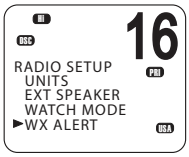


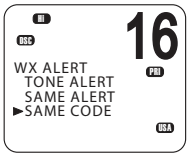
If you have already entered some SAME codes, they will be listed.

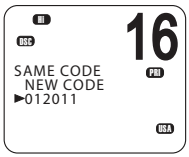


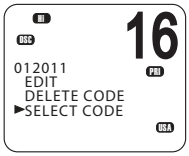
2. Select NEW CODE. Enter the new SAME code along the dashed line, one number at a time.
3. When prompted, select STORE and press [OK] to store the SAME code.

Repeat if necessary to enter a maximum of 10 SAME codes.









Selecting a working SAME code

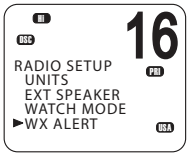
US model only.

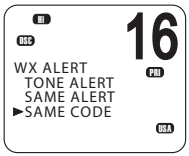
In order to receive SAME weather alerts, you must select a SAME code that you have previously entered into the radio.

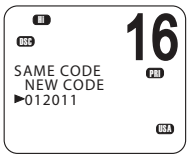
1. Select RADIO SETUP then WX ALERT → SAME CODE.
2. If you have already entered some SAME codes, they will be listed.
3. Select the SAME code for your geographic area.

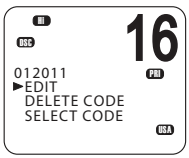
   Choose SELECT CODE. Then select YES.

   Selected SAME codes are displayed with the word 'ON' next them in the list









Editing or deleting a SAME code

US model only.

1. Select RADIO SETUP → WX ALERT → SAME CODE.
2. If you have already entered some SAME codes, they will be listed.
3. Select the SAME code for your geographic area.
4. Select EDIT or DELETE as required.