

The Marine VHF-DSC radio simulator Simrad RD 68

1 Quick Start

This application is part of a complete course to obtain de SRC certificate. See our book “Les communications en mer, VHF et HF » (only in French) on the web site www.nautischool.ch. Words in grey are defined in this reference.

Simrad's RD68 VHF radio integrates RT and DSC facilities. With some GMDSS radio installations, these two facilities may be provided with two separate equipment's, that is, one for RT and the other for DSC. RD 68 has the two modes in one device

When application starts, it's unlit.



Turn the rotary control (1) to begin and adjust the squelch (2)



GPS: Desactivated

2

Radio Online Status: Off Line



GPS: Desactivated

3

4

Radio Online Status: Off Line

1.1 Panel description

1. The **rotary controls**.
2. The **alphanumeric keypad**.
3. The **dedicated controls**, for commonly used RT_functions.
4. The four **softkeys** to the right of the display are multifunction keys whose function changes depending on which menu is displayed. The label showing the current function for each softkey appears on the right side of the display beside the softkey.
5. A **Distress button** under a sliding cover.
6. PTT **switch** on a microphone.

The radio functions are split into two main modes:

- **Radio mode** allows access to standard VHF radio functions.
- **DSC mode** covers the DSC (Digital Selective Calling) functions.

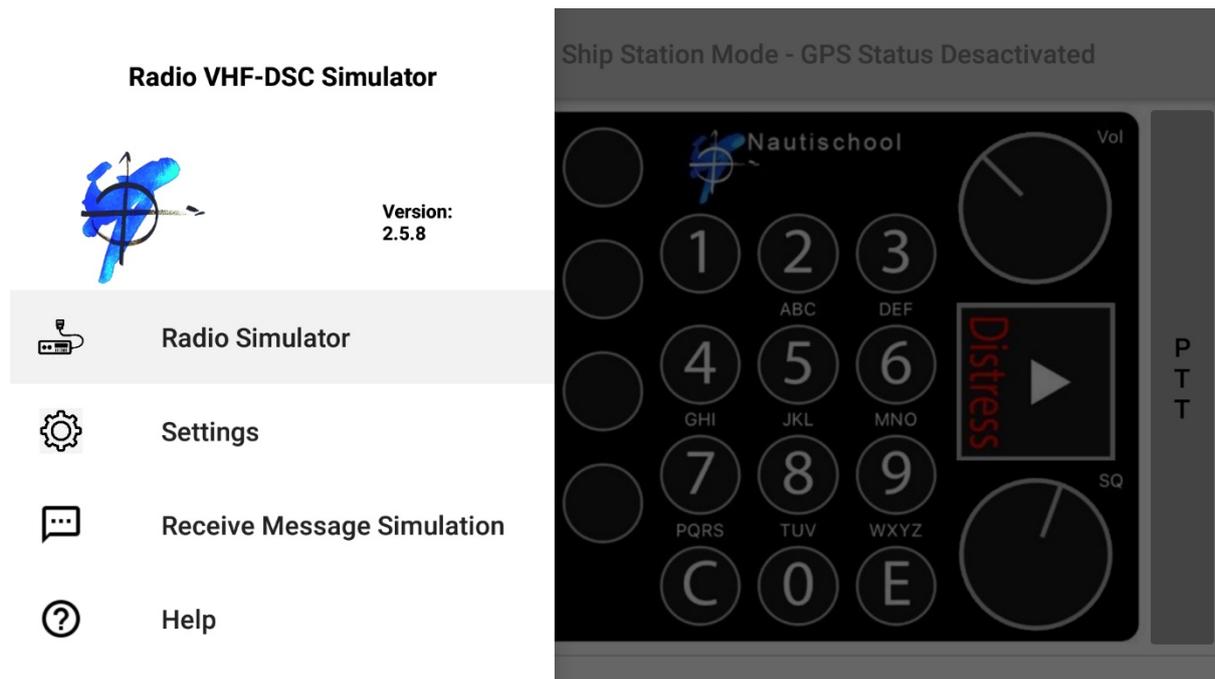
These modes are toggled by pressing the most upper softkey (labelled DSC or Rad on the display).

The interaction with the user of the VHF radio is both:

- **Audible**, for Example rigging, and
- **Visual** tough display.

2 Settings

Options can be reached with the toolbars on the top corner left:



Settings: Information about the Vessel and the area in which she navigates

Receive Message Simulation: the sound received during an alert

Help: Finding this text in the Nautischool web site.

3 Radio mode (RT)

To use standard VHF radio functions, the VHF radio should be in **Radio mode**. Press the most upper softkey until the label DSC appears on the display.

3.1 Talk and listen

Press the PTT switch (6) on the microphone handset to transmit (Tx) and release it to receive (Rx) (you can't listen AND talk simultaneously)

The symbol **Tx** (transmitting) or **Rx** (receiving) appears on the display during broadcast or reception.

3.2 Illumination

Adjust the display's backlight in order to be able to read the information on the display. press the  key.

3.3 Selecting a working channel

1. first select the required channel and confirm with "E" If channel selection is not confirmed within 2 seconds, the VHF radio will revert to the original channel
2. press and hold T/W softkey (double beep).
3. Toggle between 16 and user channel pressing alternatively on 16

3.4 Full and Low transmission

Press of the 1/25 key toggles between Full (25 watt) and Low (1 watts) transmitter power.

Channel 16 is automatically in High power. When either VHF CH 15 or 17 are selected (guard channels either side of VHF CH 16), Low transmitter power is automatically selected, in which case dedicated button will have no effect.

3.5 Dual Watch

To switch to Dual Watch:

1. select the working channel and then press the D/W key.
2. D/W appears on the display and the channel switches between the chosen channel and VHF RADIO 16.

To exit Dual Watch, press 16 key, D/W key, or C key.

3.6 Tri Watch

To switch to Tri Watch:

1. Enter a *user* channel
2. select a *working* channel and confirm with E
3. press the T/W key.

T/W appears on the display screen and the channel switches between the VHF working channel, VHF CH 16 and VHF user channel. To exit Tri Watch press 16 key or C key.

3.7 Scan

To switch on Scan function, press the Scan softkey. The Scan function cycles the VHF radio sequentially through each enabled channel, pausing when a transmission is received on any of the channels. The receiver stays on the channel on which the transmission is being made. The Channel on which stays the receiver could be:

- advanced: press Adv softkey to manually advance to the next channel in the scan sequence,
- inhibited: press Inh softkey to inhibit the channel from the scan cycle (rather than pressing Adv softkey each cycle).

To exit Scan mode, press C key or 16 key.

3.8 Memory scan

Like the Scan function, Memory Scan function will cycle VHF radio sequentially through the channels, but only those which have been preselected.

Before switching on Memory Scan function, at least two channels should be added to the Memory Scan cycle. When Memory Scan function is not running channels could be added and removed from the Memory Scan cycle. For both operations select the channel to be added, then press and hold M/S softkey (double beep). To switch on Memory Scan function, press the M/S softkey.

The receiver stays on the channel on which the transmission is being made. The Channel on which stays the receiver could be:

- advanced: press Adv softkey to manually advance to the next channel in the scan sequence,
- inhibited: press Del softkey to inhibit the channel from the scan cycle (rather than pressing Adv softkey each cycle).

To exit Memory Scan mode, press C key or 16 key.

4 DSC mode

By pressing DSC button, the display shows:



If GPS is OFF (or disabled):

4.1 Enter position and time

1. Press Menu softkey
2. Press Posn softkey
3. Press Posn softkey



4. Enter Latitude and Longitude using keypad and N, S, E, W softkeys when available
5. Press E key
6. Enter UTC time (24-hour format) using keypad
7. Press E key

Or put the GPS ON with the settings menu:

4.2 Sending a Routing alert



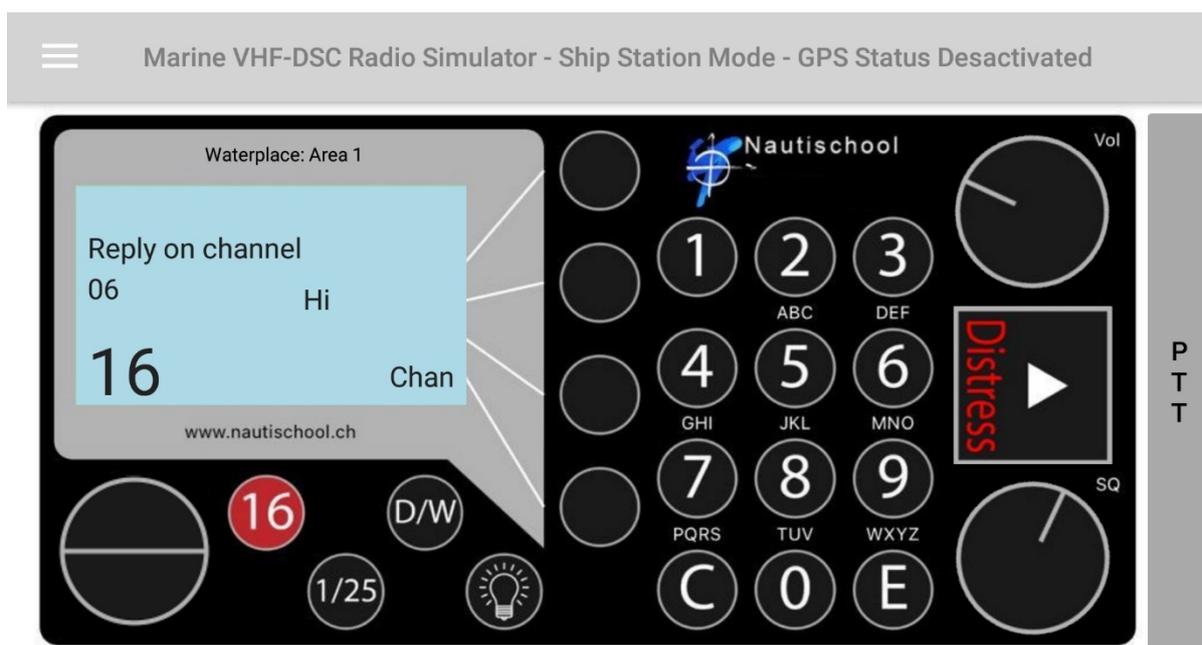
By default, MrccKoper is shown. It's a costal station, you can directly send an alert to MrccKoper and wait for an acknowledgment on channel 16 by pressing Send and E.

For another station:

Choose one already stocked on Dir, or tape directly the chosen MMSI on the keyboard.



For a ship station you can choose a channel for acknowledgment by pressing Chan



On display: SENDING DSC CALL and Waiting for acknowledge

To exit, STOP or 16.

Follow with voice communication on working channel indicated in the DSC acknowledgment.

4.3 Reception of a Routine Alert

“waiting for acknowledge” means your correspondent has to send you a message on the asked channel. If so, you can begin the conversation.



You can simulate a reception to your device by using the “Receive Message Simulation” on the menu

4.4 Sending a safety alert

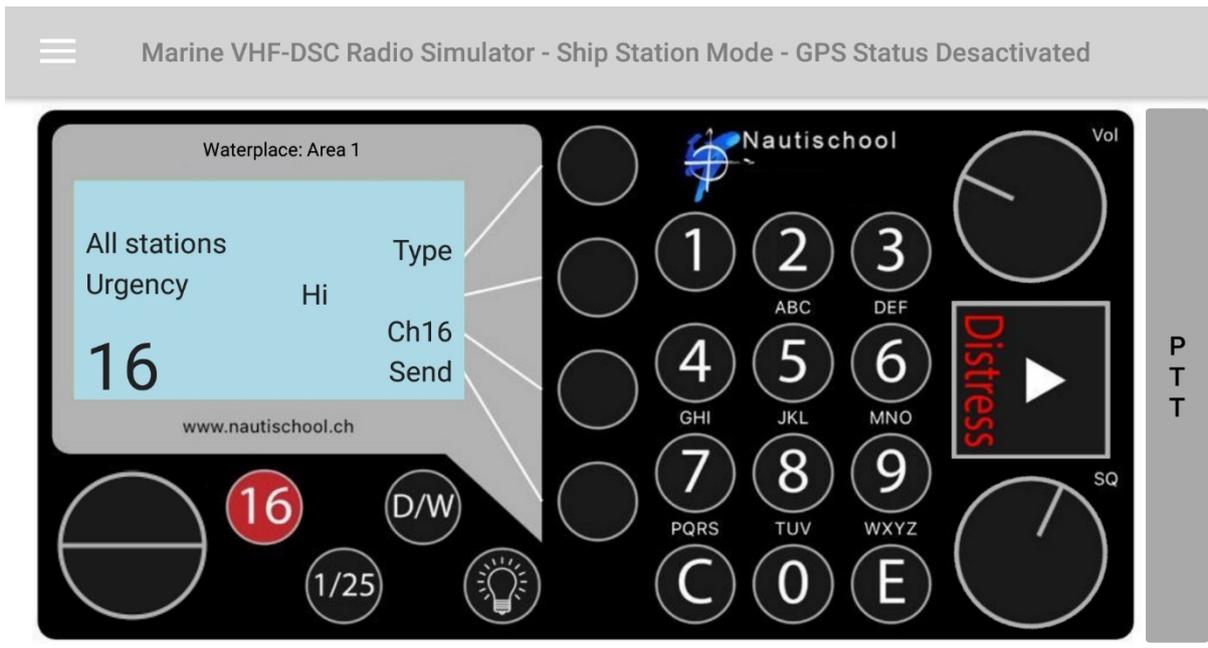
DSC / call / All Stations Safety. No possibility to choose a replay channel, no acknowledge.



Follow with voice communication: *SECURITE SECURITE SECURITE*

4.5 Sending an urgency alert

DSC / call / All Stations Urgency. No possibility to choose a replay channel, no acknowledge



Follow with voice communication PAN PAN PAN PAN PAN PAN

4.6 Sending distress alert

Open the protective flap and press once the DIST

Ready to enter information



Enter position, time and the nature of distress



Press and hold the DISTRESS key for 5 seconds. A countdown to the transmission will be displayed. Release the key at any time during this countdown to abort the transmission.

Position, time, type of distress and MMSI are automatically send



If you press 16, alert will be aborted and the display cleaned.

Follow with voice communication: MAYDAY MAYDAY MAYDAY

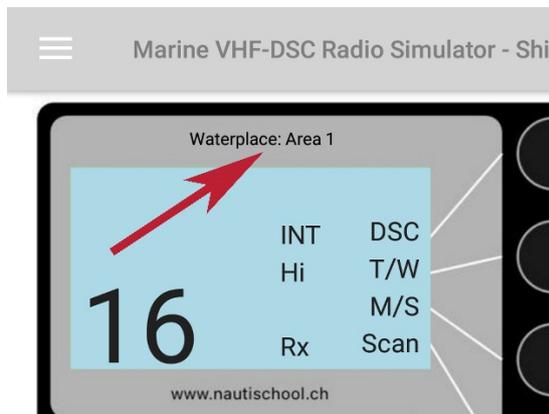
4.7 Cancelling False Alert

If a DSC Distress Alert is broadcast in error, the Alert must be stopped from repeating by either pressing a Cancel or Stop push button or by switching off the VHF DSC radio (it should be switched back on after a few seconds). An all-stations voice broadcast should then be made on VHF CH 16, cancelling the alert indicating that it was transmitted in error.

4.8 How to simulate sending et receiving DSC message?

By default, like on the real life, the simulator is ready to send and receive in a delimited geographical area, depending the high of the Antennas.

Upon the display, you can read “Waterplace: Area 1”. It’s means that all devices called on the same area can hear a DSC message you send.



If you want to simulate another “Waterplace”, go to the menu, settings, and change it.

To simulate receive messages with only your device, use the “Receive Message Simulation” on the menu.