

# A RELIABLE CLASSIC WITH REVOLUTIONARY FEATURES





### Developed in cooperation with users

Keeping the well-known user-friendliness and reliability of the SAILOR VHF's in mind, the usages of VHF's have been thoroughly investigated, and revolutionary new features and functionalities introduced.

There is only one way to design a VHF that really meets the requirements of demanding users. That is, to develop the VHF in cooperation with them. Therefore, a dedicated team of experienced engineers, as well as teams of designers and Man/Machine-Interface specialists, have been working alongside users for the entire development process. All the ideas and input gathered from all over the world have been carefully evaluated and used in the development of the SAILOR RT5022 VHF. The prototypes have been tested by users in on-board installations and to their satisfaction.

### Innovating the user-friendly communication tool

Thrane & Thrane has developed the SAILOR RT5022 VHF with a focus on creating a reliable and user-friendly VHF not only for everyday communication, but also for critical situations where lives may depend on it. All this combined with Thrane & Thrane's advanced technologies have led to the introduction of a state-of-the-art VHF containing revolutionary new features.

As a world first, the SAILOR RT5022 VHF introduces the Replay function for improved communication and safety at sea. Push the Replay button and the SAILOR RT5022 VHF will replay the important messages you may just have missed.

Thrane & Thrane has developed the SAILOR RT5022 VHF with the aim of making a durable and powerful tool. Much effort has gone into creating user-friendly menus and buttons, optimal displays, good audio, a carefully designed handset that fits perfectly in your hand, as well as easy and flexible installation. The display has been thought over like never before, resulting in separate menus, one for the most used standard VHF functionalities and one for the DSC functions. The design and positioning of the buttons have been well planned with large tactile buttons for main functions and tactile knobs for volume and squelch.

All functionalities fulfil the obligation to provide easy and intuitive operation while retaining the basic SAILOR merits; durable, reliable high-quality VHF's created for rough conditions at sea, combined with new technologies and inventions. The SAILOR RT5022 VHF aims to take history into the future.

## BUILT ON 50 YEARS OF EXPERIENCE AND TRADITION

Designed and developed on the long tradition and reputation of SAILOR VHF's, Thrane & Thrane is proud to introduce the new SAILOR RT5022 VHF DSC.

SAILOR VHF's have earned a strong reputation from more than 50 years in the maritime industry. With the introduction of the SAILOR RT5022 VHF, Thrane & Thrane has taken this legacy in maritime communications to new heights. The SAILOR RT5022 is a serious and reliable choice for the professional seaman, fulfilling and even exceeding GMDSS requirements.



### Replay function

The bridge can be a very busy place, which means that sometimes important messages are missed. The SAILOR RT5022 VHF records the latest 90 seconds of incoming communication on the channel to which it is set. If, for some reason, a message has been missed or not heard properly, simply push the Replay button and listen to it again. If you are away from the bridge, you can easily check if there were any calls during your absence. No VHF has ever offered this function. Pending patent.



# EVERY DETAIL COUNTS

Powerful built-in 5W loudspeaker with excellent sound.

Separate displays for simplified use:

- One display for standard VHF functionalities.
- One for DSC/setting functions.

Large 7-segment display for standard VHF functionalities, readable from even very wide angles. Bars and numbers lit in red along with a dimming function ensure that night vision is not disturbed.

Separate menus for standard VHF and DSC/settings. Intuitive and easy to use.

Quick menu selection.

Large and easy to activate distress button. Well protected against unintentional activation.

Large tactile buttons for easy operation of the VHF.

High-quality microphone in noise reduction design.

Ergonomic and ruggedised handset, waterproof to IP66.

Marine AR anti-reflection filter.

Tactile knobs for volume and squelch.

Graphical display for DSC and setting functions. Automatic sleep mode function when not in use to reduce night vision disturbance.

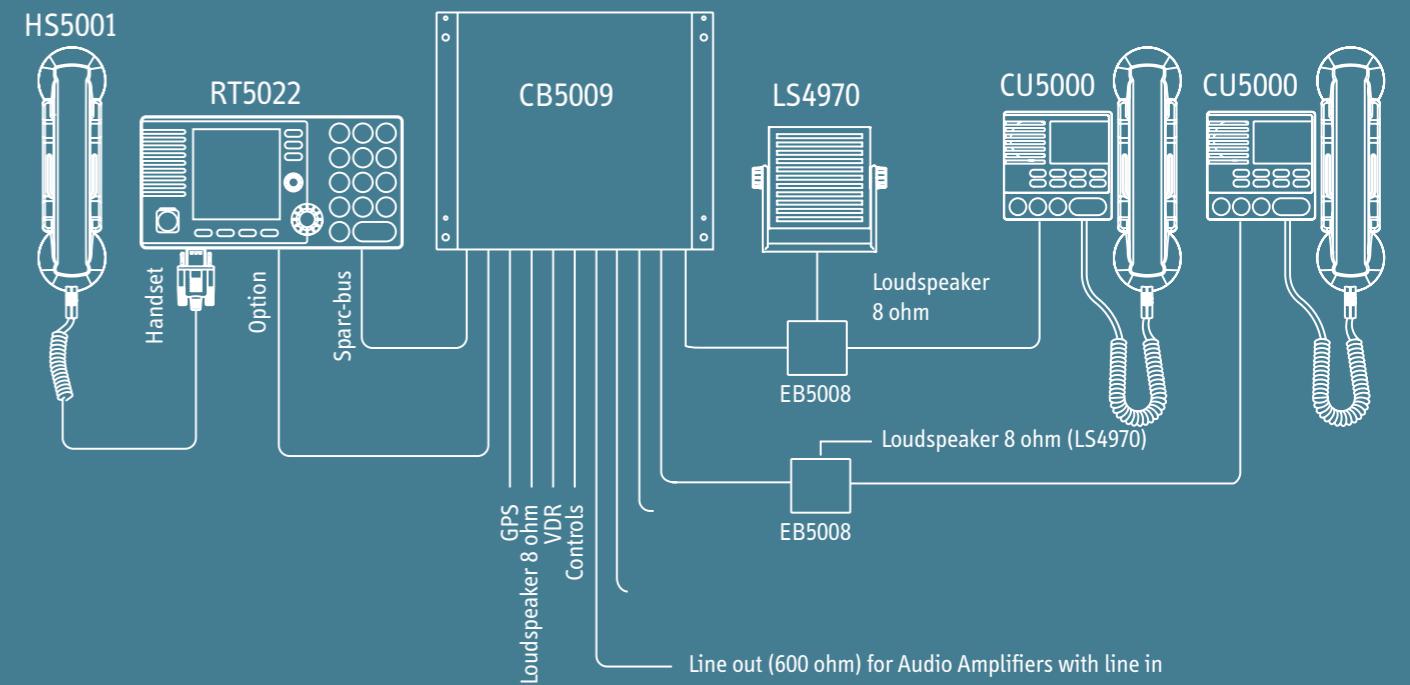
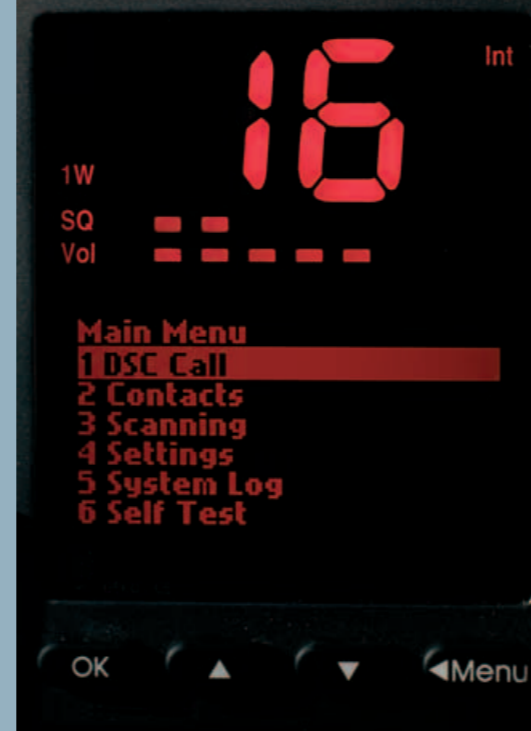
Replay function. The latest 90 seconds of incoming messages are constantly recorded and can be replayed by pushing the Replay button.



## Two displays, separate menus

On the SAILOR RT5022 VHF, the frequently used VHF operations and the DSC functionalities have been split into two separate displays – and menus. This design makes it easy for the operator to overview the settings of the VHF quickly, which simplifies usage. Standard VHF functionalities are shown on a large 7-segment display, which is not subject to the bright background light intensity usually inherent to LCD displays, which can risk disturbing night vision on the bridge. The 7-segment display is clearly readable at a distance and from even very wide angles. All text and indicators are in red, so they do not disturb night vision.

DSC functions and less used settings are shown on a graphical LCD display, which can reset to sleep mode after a short while when DSC or settings are not being used. Even when used, an effective dimming function can reduce the red background light of the LCD display and the light on the 7-segment display. Reflections from bright light or sunshine have also been significantly reduced with an anti-reflection filter. With easy to scroll menus, carefully organised and designed similar to the most popular mobile phones, the SAILOR RT5022 VHF has been made extremely user-friendly. In addition to an intuitive and easy to use menu, each menu line has a number which can be used for quick selection.



## SAILOR RT5022 VHF DSC BASIC CONFIGURATION

### Transceiver: SAILOR RT5022

The SAILOR RT5022 includes a very powerful transmitter, as well as a very sensitive, selective receiver, which reduces blocking and intermodulation from other VHF or AIS products installed. The integrated DSC functionality has been designed for ease of use. The built-in loudspeaker is both powerful and provides very clear sound quality. The SAILOR RT5022 can be fitted to any bridge, flush mounted or in a bracket. Installation is facilitated through a built-in switch mode power supply.

### Handset: SAILOR HS5001

The SAILOR HS5001 Handset fits perfectly in your hand, has high sound quality and is water resistant to IP66. The design reduces wind noise in the microphone and the speaker unit covers the ear very well, making hearing easier in a noisy environment.

### Accessories: Semi-intelligent Control Unit: SAILOR CU5000

The SAILOR CU5000 has been carefully designed for use on bridge wings or other secondary operating positions. All primary VHF functions and quick muting of incoming DSC alerts can be operated from this unit. It has been tested as exposed equipment and is water resistant to IP66.

### Future features

New functionalities soon available as options for the SAILOR RT5022 VHF:

- Scrambler for private communication
- Menu in various languages.
- Squelch settings for individual channels

When available, these new features can be uploaded to the SAILOR RT5022 VHF by your local Thrane & Thrane dealer.

## Features

- Replay function (duration 90 seconds of received data)
- 7-segment display for primary functions
- Graphical display with sleep mode for secondary functions
- All text and indicators in displays are red for improved night vision
- Display with Marine AR anti-reflection filter
- Efficient dimming of displays
- Powerful built-in 5W loudspeaker
- Ergonomic handset waterproof to IP66
- Easy to use, intuitive menus
- Scroll function
- Quick selection function
- Alarm mute button
- Large tactile buttons
- Tactile knobs for volume and squelch
- 25 to 1 watt switch button
- Built-in DSC Class A
- Dual watch
- Scanning
- Flexible installations with bracket and/or flush mounting
- Address book: 200 DSC addresses for vessels and coast stations
- Up to two semi-intelligent control units can be connected

## Technical Specifications

Conforms to all relevant international requirements and resolutions as agreed by ETSI, IEC, ITU and IMO as well as other national requirements. These specifications include i.e. ETSI EN 301 925, ETSI EN 300 698-1, ETSI EN 300 338, ITU-R M.493-11, ETU-R M.541-9, IEC 61162-1 and IEC/EN 60945 (CU5000).

### General

|                      |   |
|----------------------|---|
| Channels             | All Int., US and BI channels.<br>Up to 30 private channels in 3 separate banks designated F,P or L. Each bank contains 10 private channels. |
| Channel spacing      | 25 KHz  |
| Operation modes      | Simplex /Semi-duplex  |
| Modulation           | G3E/N for Telephony<br>G2B for DSC.   |
| Frequency stability  | Better than $\pm 3$ ppm   |
| Aerial connectors    | Standard 50 ohm female S0239  |
| Temperature range    | -15°C to +55°C  |
| Supply voltage       | 12V to 24V DC nominal   |
| Supply voltage range | (10,8V to 31,2V DC)   |

### Receiver

|                              |                                     |
|------------------------------|-------------------------------------|
| Frequency range              | 149.30 – 163.75 MHz                 |
| Sensitivity for 20 dB        | Below -121 dBm or 0,20 $\mu$ V p.d. |
| SINAD CCITT weighted         |                                     |
| AF rated Power Internal L.S. | 5W                                  |
| Output for External L.S.     | 5W (8 ohm)                          |
| Distortion                   | Less than 5%                        |
| S/N ratio                    | Better than 43dB                    |
| Spurious emission            | Less than 0,25 mw                   |
| Spurious response rejection  | Better than 74 dB                   |
| Intermodulation response     | Better than 73 dB                   |
| Co- channel rejection        | Better than -10 dB                  |
| Adjacent channel selectivity | Better than 74 dB                   |
| Blocking level               | Better than 99 dB $\mu$ V           |

### Transmitter

|                             |   |
|-----------------------------|---|
| Frequency range             | 149.30 – 163.75 MHz                                   |
| RF output power             | High: 25W +0 dB/ -0,5 dB<br>Low: 0,85W +0,5 dB/ -1 dB |
| Adjacent channel power      | Better than 75 dB                                     |
| Conducted spurious emission | Better than 0,1 $\mu$ W                               |
| Distortion                  | Better than 5%  |
| S/N ratio                   | Better than 46 dB                                     |

### DSC facilities

|                     |   |
|---------------------|---|
| DSC operation       | According to Rec. ITU-R M.541-9 and Rec. ITU-R M.689-2  |
| DSC protocol        | According to Rec. ITU-R M.493-11 Class A                |
| Navigator interface | According to IEC 61162-1 GLL, RMC, ZDA, GGA, VTG, GNS   |
| Symbol error rate   | Better than $1*10^{-2}$ @ -121 dBm or 0,20 $\mu$ V p.d. |
| Modulation          | 1700 Hz $\pm$ 400 Hz<br>1200 baud                       |
| Frequency error     | Better than $\pm 1$ Hz                                  |
| Residual modulation | Better than -26 dB                                      |

### Dimensions

|   |  |
|---|--|
| Transceiver dimensions (H and W same as RT4822 and SKANTI VHF 1000) | Height: 100 mm<br>Width: 200 mm<br>Depth: 210 mm |
| Transceiver weight  | 3.6 Kg   |

## WORLD RENOWNED MARITIME COMMUNICATION FOR MORE THAN 50 YEARS

Thrane & Thrane is the world's leading manufacturer of global mobile satellite and radio communication. We develop and market satellite and radio communication equipment for use at sea, on land and in the air.

The combination of new technologies, proud traditions and our legacy in maritime communication equipment provides a unique platform for the development of reliable and technologically advanced products for seafarers all over the world. We are devoted to constant development and innovation for solutions which improve safety and daily life at sea.

Thrane & Thrane acquired the SAILOR brand in 2004 thus adding more than 50 years of legacy and experience in maritime communication to its range. Thrane & Thrane now offers a complete range of reliable, innovative and user-friendly solutions. The SAILOR products range from VHF and MF/HF to complete GMDSS solutions over Inmarsat-C, mini-C, mini-M, Fleet, Iridium and SSAS solutions.

### World class service

The Thrane & Thrane maritime service network stretches around the globe. Carefully selected and trained dealers, distributors and service centres are available for instant support and service in harbours all over the world.

Regular factory training for staff as well as a range of spare parts in stock are mandatory for certified members of the Thrane & Thrane Service Network, assuring fast and qualified assistance. As time is crucial for ship management, we aim to be the reliable service partner - in any harbour, at any time. Read more about Thrane & Thrane's service setup at: [www.tt.dk/service](http://www.tt.dk/service)