

Technical data for SAILOR VHF RT146

Fulfils the international CEPT regulation

General:

Channel separation: 25 kHz
 Modulation: G3EJN (Phase)
 Operation: Simplex and Duplex
 Temperature range: -20°C to +55°C
 Frequency stability: ± 10 ppm
 Antenna impedance: 50 ohm

Power supply: 12V DC or 24V DC
 Power consumption: Stand by = 0.4 Amp.
 Transmit = 6.0 Amp.
 - 10% to +30%

Voltage variation:
 (with reduced data
 according to inter-
 national standards)
 Dimensions:

Weight:

Height = 222 mm
 Width = 326 mm
 Depth = 118 mm
 8.4 kg

Receiver

Frequency range simplex: 155.400 - 158.000 MHz
 Frequency range duplex: 160.0 - 162.600 MHz
 Sensitivity: 0.30 uV pd at 12 dB SINAD
 Duplex desensitization: Less than 1 dB
 AF output: 0.8V RMS/300 ohm

Transmitter

Frequency range normal: 155.400 - 158.000 MHz
 RF output power: 25 Watt + 0, - 0,6 dB
 Reduced RF output: 0,5 to 1 Watt
 Distortion: Less than 2%

Technical Data

VHF Control Units C401 - C402 - C403

All international maritime VHF channels
 Private channels: 20
 Temperature range: -20°C to +55°C
 AF output power: 3 Watt/4 ohm
 Telephone output: 0,45V RMS/200 ohm
 Distortion: Less than 5%
 Dimensions: Height = 220 mm
 Width = 120 mm
 Depth = 90 mm
 Weight: 1,4 kg

C402 only

Selective call decoder recommended by CCIR
 Signal/Noise ratio: 0 dB
 Reaction time: Individual call 50 mSecs.
 All ships call 12 mSecs.
 Wait: Individual call 220 mSecs.
 All ships call 220 mSecs.
 Acoustic Alarm: Built-in loudspeaker
 Visual Alarm: Two light diodes, one for individual call and one for all ships call.

C403 only

All international maritime VHF channels and the chan-
 nel required in USA (U.S. mode)

Option

SAILOR Multicable H414

SAILOR Multicable H414 is used to extend the cable between the VHF RT146 and the VHF Control Units or the Remote Control Box H410. SAILOR Multicable H414 is a specially designed 17-cores multicable with 2 screened leads and 4 leads with a large diameter.

24V DC Power Supply N418

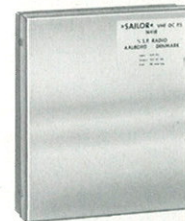
SAILOR Power Supply N418 is a high efficiency switch mode power supply used to convert 24V DC to 12V DC. Easy installation of N418 on the mounting plate of the VHF RT146.

Technical Data

Input voltage: 16V - 32V
 Output voltage: 13.2V
 Output current: 0 - 6 Amp.
 Efficiency: 85%

Dimensions

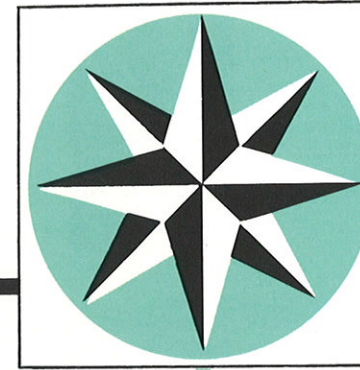
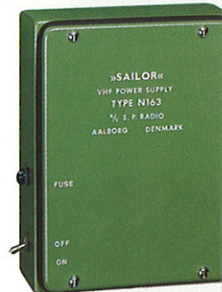
Height = 155 mm
 Width = 145 mm
 Depth = 35 mm



Power Supply N163 S

SAILOR Power Supply N163 S can supply the complete VHF programme from AC Mains 220/127/110 Volt AC. SAILOR Power Supply N163 S can only be used when RT143-RT144-RT145 and RT146 are 24 Volt DC version. SAILOR N163 S has automatic change from AC-mains to 24V battery supply.

Dimensions: Height = 225 mm
 Width = 167 mm
 Depth = 95 mm



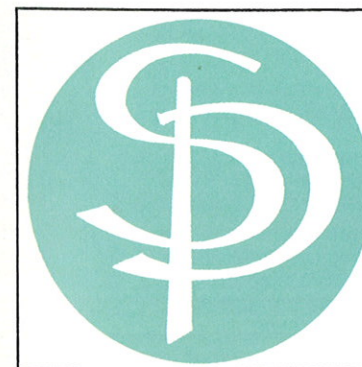
SAILOR Multi-Remote DUPLEX VHF RADIOTELEPHONE



Sai or

DUPLEX VHF Programme

RT146
C401 C402 C403



S.P. RADIO A/S - AALBORG - DENMARK

S. P. RADIO A/S . 9200 AALBORG SV . DENMARK . TLF. (08) 18 09 99

SAILOR VHF RT146



General Description

SAILOR VHF RT146 is a marine VHF radio-telephone for ship/shore and ship/ship duplex and simplex communication. SAILOR VHF RT146 has built-in duplex-filter, microprocessor controlled frequency synthesizer, and 20 optional private channels.

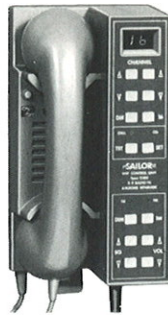
SAILOR VHF Control Unit C401



General Description

SAILOR VHF Control Unit C401 is designed to be used in conjunction with the SAILOR VHF RT146. SAILOR C401 has keyboard control of all functions. Channel selector, volume control, squelch control and dimmer are all operated by push buttons. SAILOR C401 can be installed up to 100 metres away from the VHF RT146.

SAILOR VHF Control Unit C402



General Description

SAILOR VHF Control Unit C402 is designed to be used with the VHF RT146. SAILOR C402 has keyboard control of all functions. Channel selector, volume control, squelch control and dimmer are all operated by push buttons. SAILOR C402 can be installed up to 100 metres away from the VHF RT146. SAILOR C402 has built-in selcall facilities as recommended by CCIR.

SAILOR VHF Control Unit C403



General Description

SAILOR VHF Control Unit C403 is designed to be used with the VHF RT146. SAILOR C403 has keyboard control of all functions. Channel selector, volume control, squelch control and dimmer are all operated by push buttons. SAILOR C403 can be installed up to 100 metres away from the VHF RT146. SAILOR C403 can be switched between the international maritime VHF channels and the channels required in USA.

SAILOR Phone Patch H416 and H410



General Description

SAILOR Phone Patch H416 is combined with a Remote Control Box H410. The Phone Patch is used to interface a local or public telephone network to the duplex VHF Radiotelephone RT146. E.g. The local telephone on board is connected via VHF RT146 and the coast station to the subscriber ashore.

SAILOR Remote Control Box H410



General Description

SAILOR Remote Control Box H410 is designed to be used with the VHF Control Units C401, C402 or C403 when there are more than one operating point. H410 switches on and off the control unit. SAILOR H410 can be programmed (with a jumper) for preference. SAILOR H410 ensures that only one control unit at a time can be switched on.

Sailor

DUPLEX VHF Radiotelephone



Multi-Remote VHF System

SAILOR Multi-Remote VHF System has been developed on the fact that an installation always consists of a VHF-unit, a microtelephone handset and an extra loudspeaker. S. P. Radio has integrated the controls, the microtelephone handset and the loudspeaker in one handy unit, which gives the following flexibility on different installations.

The most simple installation consists of the SAILOR VHF RT146 and e.g. SAILOR VHF Control Unit C401. The transmitter and receiver box RT146 can be mounted hidden away close to the aerial feed-through or the batteries.

The compact VHF Control Unit can easily be mounted at the most convenient location for operation because of its small dimensions.

The control unit is delivered with a multicable, 150 cm long, and a plug for quick connection to VHF RT146. The multicable can be extended up to 100 metres.

The installation can be carried out in such a way that there are more than one operating point but only one VHF Control Unit. Then the control unit can be moved from one operation point to another, e.g. from the fly bridge to the wheel-house and vice versa.

Introduction

SAILOR VHF Programme is developed and produced in Europe's leading factory dealing in maritime radiotelephones. The annual output exceeds 20,000 sets. Years of experience with VHF and SSB radiotelephones working under the worst conditions imaginable, from the African rivers to the harsh environments of the Arctic etc., has enabled S. P. Radio to develop a VHF programme which not only complies with the international CEPT and national requirements for maritime VHF radiotelephones but also meets the requirements of the user in every respect.

SAILOR Duplex VHF Programme

SAILOR VHF Programme consists also of a duplex multi-remote VHF system built-up of the units RT146 - C401 - C402 - C403 etc. These units can be combined in various ways giving a flexibility until now unknown regarding operation and installation, and with the built-in duplex-filter you have full duplex communication on one antenna etc.

Channel Programming

SAILOR VHF RT146 is programmed for all the 55 international maritime VHF channels but a further 20 private channels can be programmed. The programming takes place in a PROM located in the VHF RT146.

Programming Features.

- All private and weather channels which are used in the maritime VHF band. Frequency range for the transmitter is 155.4 - 158.0 MHz. Frequency ranges for the receiver are 155.4 - 158.0 MHz and 160.0 - 162.6 MHz.
- The simplex channels 75 and 76 with reduced output when these are released by the authorities.
- One or more of the channels can be blocked either totally or the transmitter only.
- Automatic reduction to 1 Watt can be programmed on one or more of the channels.
- Optionally the RT146 can be programmed so that one or more of the channels are provided with an external control, e.g. for blocking of auxiliary receivers (river traffic).

Selcall

The VHF Control Unit C402 is provided with a selcall decoder. Direct calls from the coast station to a specific selcall number (like your ordinary telephone) is possible. When there is a call for you an acoustic alarm will be heard for 10 secs and a lamp will indicate that you have been called. It will therefore be unnecessary to listen to the traffic lists of the coast stations.

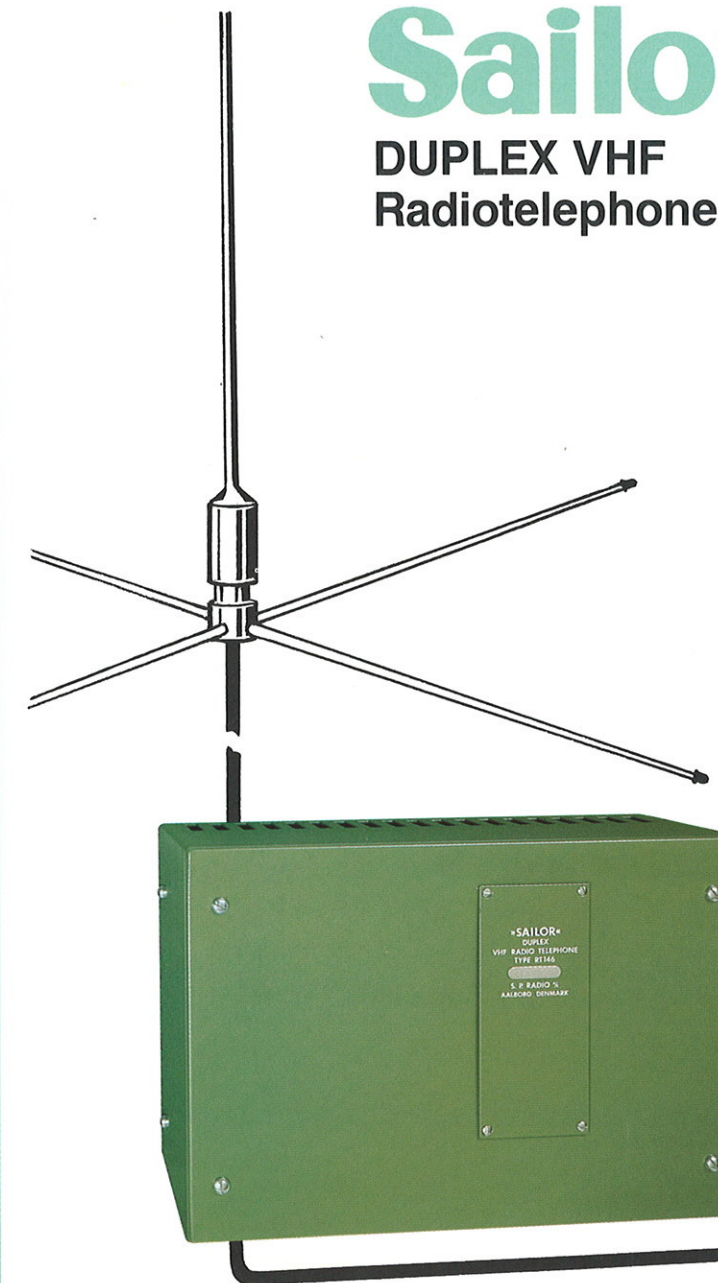
All ships call from the coast station with distress messages, gale warnings, navigational warnings etc. will be received.

Service

SAILOR VHF RT146 is a completely new construction designed on many years experience from the maritime VHF market. Both the VHF and the control units are built-up of modules, giving easy and rapid maintenance. Both the VHF and the control unit are installed on mounting plates from where the units can easily be removed or replaced because of the self-locking suspension fittings.

Sailor

DUPLEX VHF Radiotelephone



The most comprehensive installation for SAILOR Multi-Remote VHF System is one with an unlimited number of operating points, comprising one SAILOR

VHF RT146 and one Remote Control Box H410.

Controls

VHF Control Units C401 - C402 - C403

All functions are keyboard controlled.

ON/OFF

To switch the VHF set ON or OFF.
Not in function when remote controlled by H410.

Display

The LED-display shows the selected channel number.

CHANNEL

The two keys to the right shift the unit digit of the channel number up or down.

The two keys to the left shift the tens of the channel number up or down.

D.W. (DUAL WATCH)

When the »D.W.« key is pressed and the handset is in its holder, the receiver is listening to the selected channel and is watching channel 16 (preference channel). The display flashes showing the selected channel number and channel 16.

If a signal is received on channel 16, the receiver will listen continuously to channel 16, until the signal disappears. The display shows channel number 16.

If the handset is removed from its holder, the Dual Watch is switched off and the selected channel is ON.

When the »D.W.« key is pressed again the Dual Watch is switched off.

16. (Distress and Calling)

When the key »16« is pressed, channel 16 is quickly selected. Press the key »16« again, and the previous channel is selected.

DIM

The intensity of the LED-display and the illumination of the Symbols can be controlled in four steps.

1W

When the key »1W« is pressed, the LED »1W« will light, and the transmitter output is reduced to less than 1 Watt.

SQ

The squelch sensitivity can be controlled in 15 steps.

Adjustment of the best squelch sensitivity:

Press the key with the arrow »up« until the white noise is heard in the loudspeaker. Then press the key with the arrow »down« until the white noise in the loudspeaker just stops. The adjustment is to be done on a channel without signal.

VOL

The volume can be controlled in 15 steps.

C402 only

SET

When the key »SET« is pressed the selcall decoder will be reset after a call. The acoustic and the visual alarm will be cancelled.

CALL

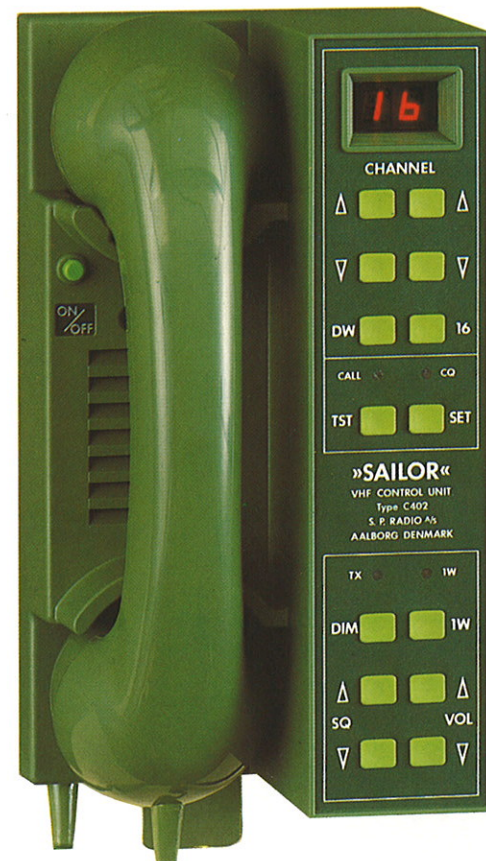
The LED will light when an individual call has been received. The acoustic alarm will stop after 10 secs.

CQ

The LED will light when an all ships call has been received. The acoustic alarm will be ON until the key »SET« is pressed.

TST

When the key »TST« is pressed the selcall decoder will be tested. First the acoustic alarm and the individual call LED will be ON and shortly after the all ships call LED will be ON.



C403 only

US

When the key »US« is pressed, the frequencies used in USA (U.S.-mode) are selected, the LED »US« will light.

Remote Control Box H410

ON

To switch the VHF set ON.
(The ON/OFF key on C401 - C402 - C403 is not in function).

OFF

To switch the VHF set OFF.

IN USE

The LED will light when one of the Control Units C401 - C402 - C403 is in use.

Preference

One or more of the Remote Control Boxes H410 can be programmed for preference.

The remote control box with preference can always be switched on even when the LED »IN USE« is alight.

The remote control box without preference, can **not** be switched on when the LED »IN USE« is alight.

Technical data for SAILOR VHF RT146

Fulfills the international CEPT regulation

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Operation: Simplex and Duplex
Temperature range: -20°C to +55°C
Frequency stability: ± 10 ppm
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Power supply: 12V DC or 24V DC
Power consumption: Stand by = 0.4 Amp.
Transmit = 6.0 Amp.
- 10% to +30%

Voltage variation:
(with reduced data according to international standards)

Dimensions: Height = 222 mm
Width = 326 mm
Depth = 118 mm

Weight: 8.4 kg

Receiver

Frequency range simplex: 155.400 - 158.000 MHz
Frequency range duplex: 160.0 - 162.600 MHz
Sensitivity: 0.30 µV pd at 12 dB SINAD
Duplex desensitization: Less than 1 dB
AF output: 0.8V RMS/300 ohm

Transmitter

Frequency range normal: 155.400 - 158.000 MHz
RF output power: 25 Watt + 0, - 0,6 dB
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Distortion: Less than 5%
Dimensions: Height = 220 mm
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Depth = 90 mm

Weight: 1,4 kg

C402 only

Selective call decoder recommended by CCIR
Signal/Noise ratio: 0 dB
Reaction time: Individual call 50 mSecs.
All ships call 12 mSecs.

Wait: Individual call 220 mSecs.
All ships call 220 mSecs.

Acoustic Alarm: Built-in loudspeaker
Visual Alarm: Two light diodes, one for individual call and one for all ships call.

C403 only

All international maritime VHF channels and the channel required in USA (U.S. mode)

Option

SAILOR Multicable H414

SAILOR Multicable H414 is used to extend the cable between the VHF RT146 and the VHF Control Units or the Remote Control Box H410. SAILOR Multicable H414 is a specially designed 17-cores multicable with 2 screened leads and 4 leads with a large diameter.

24V DC Power Supply N418

SAILOR Power Supply N418 is a high efficiency switch mode power supply used to convert 24V DC to 12V DC.
Easy installation of N418 on the mounting plate of the VHF RT146.

Technical Data

Input voltage: 16V - 32V
Output voltage: 13.2V
Output current: 0 - 6 Amp.
Efficiency: 85%

Dimensions

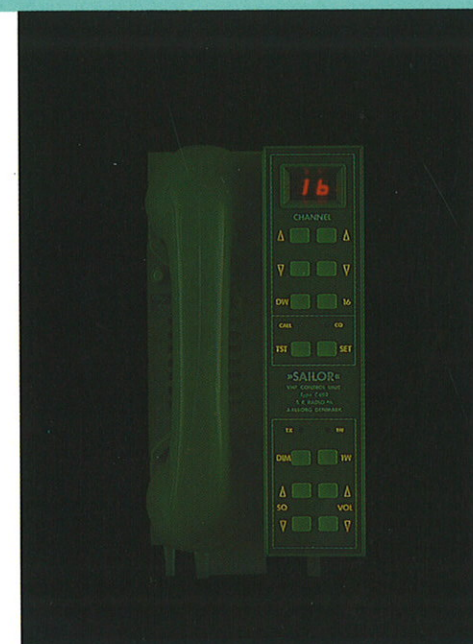
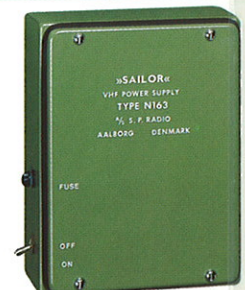
Height = 155 mm
Width = 145 mm
Depth = 35 mm



Power Supply N163 S

SAILOR Power Supply N163 S can supply the complete VHF programme from AC Mains 220/127/110 Volt AC.
SAILOR Power Supply N163 S can only be used when RT143-RT144-RT145 and RT146 are 24 Volt DC version.
SAILOR N163 S has automatic change from AC-mains to 24V battery supply.

Dimensions: Height = 225 mm
Width = 167 mm
Depth = 95 mm



ILLUMINATION

SAILOR VHF Control Units can be operated under all lighting conditions. The lettering on the control panel is illuminated from the rear so the control unit can be operated in complete darkness.
The channel read-out is a LED-display of high efficiency, covered with a circular polarizer for contrasts improvement. This means that reading of the channel number can be achieved even in the strongest sunshine.



SAILOR VHF Control Unit C403



General Description
SAILOR VHF Control Unit C403 is designed to be used with the VHF RT146. SAILOR C403 has keyboard control of all functions. Channel selector, volume control, squelch control and dimmer are all operated by push buttons. SAILOR C403 can be installed up to 100 metres away from the VHF RT146. SAILOR C403 can be switched between the international maritime VHF channels and the channels required in USA.

SAILOR Phone Patch H416 and H410



General Description
SAILOR Phone Patch H416 is combined with a Remote Control Box H410. The Phone Patch is used to interface a local or public telephone network to the duplex VHF Radiotelephone RT146. E.g. The local telephone on board is connected via VHF RT146 and the coast station to the subscriber ashore.

SAILOR Remote Control Box H410



General Description
SAILOR Remote Control Box H410 is designed to be used with the VHF Control Units C401, C402 or C403 when there are more than one operating point. H410 switches on and off the control unit. SAILOR H410 can be programmed (with a jumper) for preference. SAILOR H410 ensures that only one control unit at a time can be switched on.

SAILOR Splitter Box H411



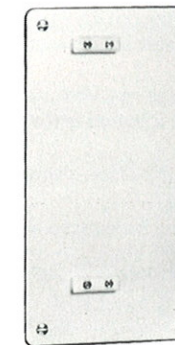
General Description
SAILOR Splitter Box H411 can be used in an installation where the multicable has to be split into two directions. SAILOR H411 can also be used as connection box for the multicable.

SAILOR Connection Box H412



General Description
SAILOR Connection Box H412 can be used in installations with one control unit, where the multicable has to be extended.

SAILOR Mounting Plate H413



General Description
SAILOR Mounting Plate H413 enables quick and easy mounting of VHF Control Unit. SAILOR Mounting Plate H413 is supplied with every VHF Control Unit. An extra Mounting Plate H413 can be provided if the VHF Control Unit has to be moved from one location to another.

on
programme is developed and produced in Europe's leading in maritime radiotelephones. The annual output exceeds 100,000 units. The company's experience with VHF and SSB radiotelephones work-conditions imaginable, from the African rivers to the icebergs of the Arctic etc., has enabled S. P. Radio to develop a programme which not only complies with the international CEPT requirements for maritime VHF radiotelephones but also meets the requirements of the user in every respect.

Duplex VHF Programme
The programme consists also of a duplex multi-remote VHF system. The units RT146 - C401 - C402 - C403 etc. These units can be installed in various ways giving a flexibility until now unknown regarding installation, and with the built-in duplex-filter you have full-duplex communication on one antenna etc.

Programming
RT146 is programmed for all the 55 international maritime channels. In addition a further 20 private channels can be programmed. The programming takes place in a PROM located in the VHF RT146.

Features
The RT146 has 10 weather channels which are used in the maritime VHF frequency range for the transmitter is 155.4 - 158.0 MHz. Frequencies for the receiver are 155.4 - 158.0 MHz and 160.0 - 162.6 MHz.

Channels 75 and 76 with reduced output when these are required by the authorities.

Any of the channels can be blocked either totally or the transmission to 1 Watt can be programmed on one or more of the channels.

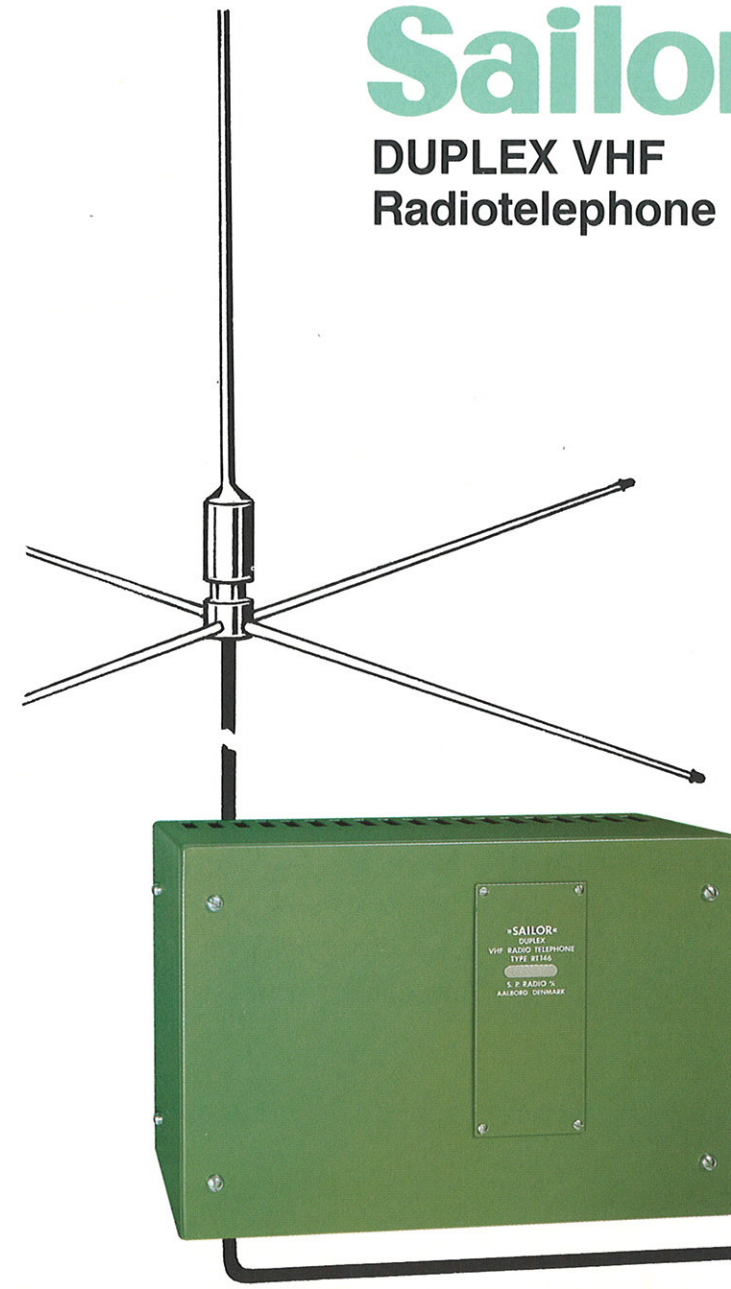
The RT146 can be programmed so that one or more of the channels provided with an external control, e.g. for blocking of auxiliary channels (river traffic).

The Control Unit C402 is provided with a selcall decoder. This enables a call from the coast station to a specific selcall number (like your own) is possible. When there is a call for you an acoustic signal sounds for 10 secs and a lamp will indicate that you have been called. Therefore it is unnecessary to listen to the traffic lists of the coast station.

Distress messages, gale warnings, etc. will be received.

RT146 is a completely new construction designed on many years of experience from the maritime VHF market. Both the VHF and the control unit are installed on mounting plates from which they can easily be removed or replaced because of the self-studying fittings.

Sailor DUPLEX VHF Radiotelephone



The most comprehensive installation for SAILOR Multi-Remote VHF System is one with an unlimited number of operating points, comprising one SAILOR

VHF RT146 and a number of SAILOR Control Units e.g. C401 and a corresponding number of SAILOR Remote Control Boxes H410 one for every operating point.

Preference
In multi-remote installation all VHF Control Units can have full-function of all operating facilities. Only one Control Unit at a time can be in operation. All the other remote control boxes show occupied and cannot be switched on. One or more Control Units can

have preference so that they can break-in at any time and have the full-function of the station. For the bridge installation it is important for the Control Unit to have preference. If there are more than one operating points on the bridge, they can all have preference.