

SALES INTRODUCTION

SAILOR® SATELLITE TV

Stay tuned in at sea – with live satellite TV



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1. SAILOR® 60/90/120 Satellite TV – Introduction

Beyond doubt the lack of skilled seafarers has been and continues to be the single most important issue in the maritime industry. Thrane & Thrane understand this better than anybody in the industry, after we for more than two decades have been providing the most innovative and reliable communication platforms to the maritime community.

Thrane & Thrane products are the vital link when crews need to communicate with their loved ones and now Thrane & Thrane want to enhance the quality of live for all seafarers by giving them access to their favourite TV channels while sailing on the high seas. Who is going to say no to be watching their favourite football team play *LIVE* on TV or the news in *real-time* as they unfold?

Everybody knows that SAILOR is the answer to any maritime communications requirements a vessel might have, now SAILOR is becoming *the answer* to your TV entertainment requirements as well. Innovative products backed by our global service network makes our offering very attractive and hard to match.

Stay tuned, SAILOR Satellite TV brings entertainment and affordable Crew Welfare on board.



2. Why Satellite TV?

Thrane & Thrane is entering the world of satellite TV for ships after the acquisition of Swedish company Naval Electronics AB in February 2009. Naval has developed antenna systems to receive terrestrial TV and radio programmes for more than 30 years, during the last five years also antenna systems for satellite TV. In fact, SAILOR Satellite TV represents the third generation satellite TV product.

This company acquisition jump starts Thrane & Thrane into the foray of satellite TV which was deemed as strategic target in the long run. SAILOR Satellite TV provides unique and new opportunities to expand our Partner's business with marine electronics.

3. Market Segments

SAILOR Satellite TV is suitable for any vessel from 25 metres and up, depending on the model; SAILOR 60, SAILOR 90 or SAILOR 120 Satellite TV. But realistically, we believe that the market take-up will be in these segments.

Commercial Shipping

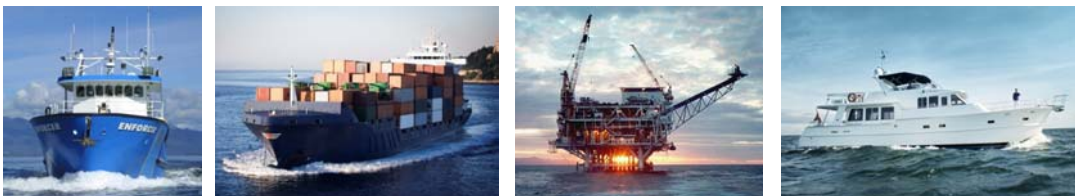
- Cargo / container / bulk,
- Tankers,
- Offshore supply vessels,
- Survey vessels,
- Regional passenger vessels; ferries and cruise liners.

Fishing vessels

- Fishing vessels.

Yachts

- Yachts which demand reliable reception of satellite TV while at sea.



4. Availability

The SAILOR Satellite TV antenna systems will be available from Thrane & Thrane headquarters in Denmark from September 2009. For detailed product numbers and codes please refer to the separate SAILOR Satellite TV pricelist which will become part of the general price book with the next quarterly update. Please note that there are separate prices for SAILOR 60, SAILOR 90 and SAILOR 120 Satellite TV antenna systems.

Satellite TV receivers and subscriptions for other than free-to-air channel bundles are charged by the respective service providers. Thrane & Thrane supplies the antenna systems to connect to these receivers and channels.

5. Models, Scope of Supply, Options

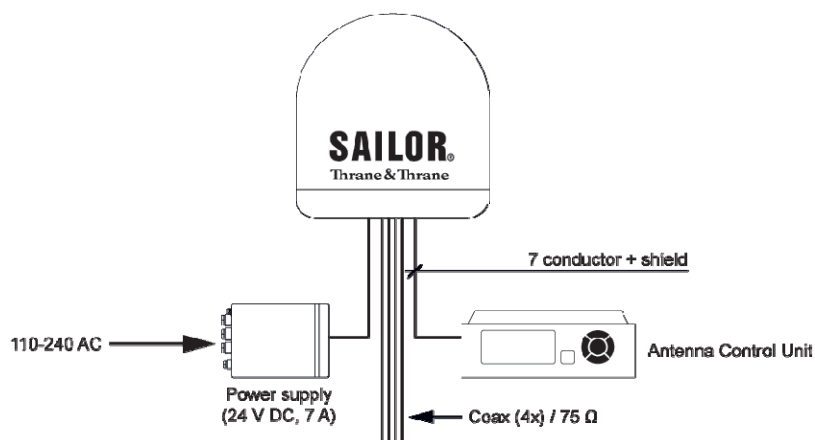
The SAILOR Satellite TV antenna systems come in three sizes and packages:

- SAILOR 60 Satellite TV
- SAILOR 90 Satellite TV
- SAILOR 120 Satellite TV

Each SAILOR Satellite TV system includes:

- Above Deck Unit (ADU)
- Below Deck Equipment (BDE):
 - Antenna Control Unit (ACU)
 - Power cable
 - Data connection cable to ADU.

The SAILOR Satellite TV Partner is asked to source antenna cables and Multi Switch connecting the ADU to the receivers.



6. Technical Specifications

	SAILOR 60 Satellite TV	SAILOR 90 Satellite TV	SAILOR 120 Satellite TV
Active antenna diameter	60 cm / 24"	90 cm / 36"	116 cm / 46"
Radome diameter	685 mm / 27"	1045 mm / 41"	1430 mm / 56"
Radome height	790 mm / 31"	1175 mm / 46"	1500 mm / 59"
Weight incl. radome	40 kg / 88 lbs.	60 kg / 132 lbs.	90 kg / 198 lbs.
LNB	Ku-band quattro	Ku-band quattro	Ku-band quattro
Min EIRP (FEC 2/3)	47 dBW	43 dBW	41 dBW
Azimuth range	630°	630°	630°
Elevation range	-10 to 120°	-8 to 120°	-15 to 80°
LNB skew range	±90°	±90°	±90°
Maximum useable elevation	70°	70°	65°

7. Third Party Equipment and Local Supply

Antenna cables

Each SAILOR Satellite TV needs four 75Ω Ohm antenna cables to connect the ADU to the Multi Switch. The recommended cable types are

- RG-11,
- LMR400-75,
- LMR600-75.

Multi Switch

Number of inputs: 4 satellite, 1 terrestrial.

Number of Output: 4, 8, 12, 16.

A Multi Switch with the required number of outputs is necessary to establish connection between the SAILOR Satellite TV antenna and the Satellite Receivers.

Line Amplifier

Satellite Receivers

Programming for television depends on the receiver you purchase from a regional satellite TV provider. These are the usual land-based providers. There is no single provider with global service availability.



Television Sets

Television sets are not supplied with a SAILOR Satellite TV but are local supply by our Partners

8. Geographical coverage for SAILOR Satellite TV

Geographical coverage to be able to receive TV signal via satellite is available in:

- Europe
- West and South Africa
- Middle East
- Central Asia (Singapore+, India)
- Japan with surroundings
- Australia & New Zealand
- North America¹ and the Caribbean and parts of South America

Each satellite has a limited coverage and changing from one satellite to another is a manual procedure performed on the ship. Changing satellites in between continents will be associated with passing through areas of no coverage. SAILOR Satellite TV antenna

¹ USA version will be available later in 2009.

systems for North America are technically different from the rest of the world. If a vessel goes between those regions, there is one antenna required for each region.

There is a separate document available depicting typical satellite coverage maps.

9. Features & Benefits

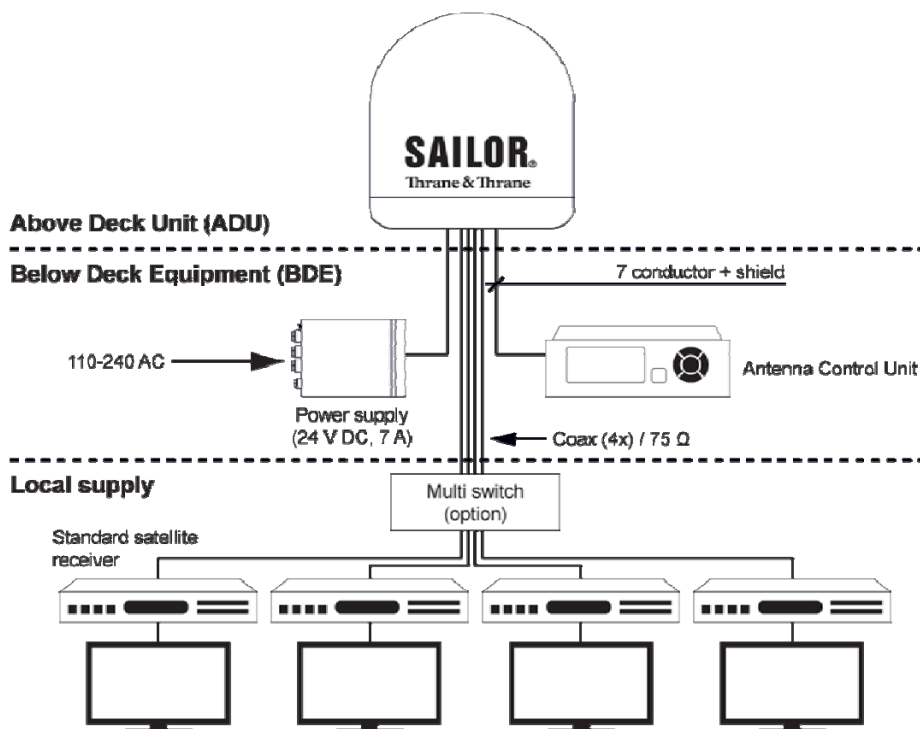
Features

- Easy installation (Rate Gyro & GPS built-in)
- Easy maintenance (software upload from ACU)
- Improved stability (mechanically and electrically)
- Improved receiver.
- Easy to use ACU for all models (No PC)
- Less mechanical noise
- Approved power supply
- Identical spare parts
- SAILOR Satellite TV Solution for hardware and global service
- Supports up to 16 direct distribution satellite TV receivers on board.

Benefits

- Ease of selling – all in one solution.
- Much less project time – saves time, cost, generates more business.
- More projects in shorter time.

Illustration below: Schematics of a typical installation:



The new SAILOR 6210 VHF, SAILOR 6215 VHF DSC Class D and SAILOR 6216 VHF DSC will replace SAILOR A1 VHF and SAILOR A1 VHF DSC in the product portfolio.

SAILOR RT2048 will NOT be replaced by the new VHF's and is not discontinued now.

The SAILOR A1 VHF and SAILOR A1 VHF DSC will be discontinued from December 2009. Last order date for SAILOR A1 VHF and SAILOR A1 VHF DSC will be November 30th 2009, with delivery no later than December 2009.

A separate discontinue notice will be distributed.

10. Marketing Collateral & other material

All of this collateral will be available for download from the Extranet.

Price list	Price sheet for hardware,
Business Plan template	In order to become a SAILOR Satellite TV Partner we kindly ask you to prepare a business plan to share your views about this product and market.
Global Service	A description of the roll-out of the global service within our global OSC ² network can be found in this document.
Product Sheet	For your marketing activities we have produced a SAILOR Satellite TV brochure in English.
Presentation	A SAILOR Satellite TV presentation is available in the popular PDF and/or Microsoft PowerPoint file formats.
Drawings	Drawings are available for below and above deck unit equipment.
Banners	Pull-up banners can be provided for quick sales presentations or local events.

² OSC = On Board Service Center; Thrane & Thrane's unique network of service centers around the world.

In order to assist you with even more detailed information about the products and prices the following material is available on the extranet:

- Product Price List
- Product Presentation
- Product Sheet
- Photos
- Drawings

Further marketing material, such as desktop displays, posters, banners and window stickers will be available to support you in promoting the SAILOR 6200 VHF series to your dealer channels. Please order this from our extranet.

11. Technical Training

The training schedule for SAILOR Satellite TV is published on our eTraining website. Please enter this address in your web browser click on this link:

<http://extranet.thrane.com/Training.aspx>

or please contact Even Falk Magnussen at our training facility in Aalborg; efm@thrane.com

This is only the beginning. Let's make this a success and build a solid business for the future. Stay tuned!