



# RT-800

## All features at a glance

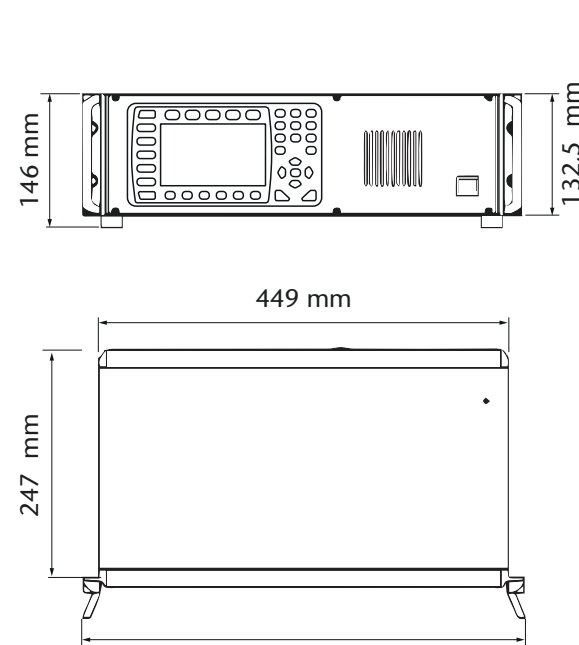
- Best price-performance ratio
- Decoding of transmissions on all 19 COSPAS-SARSAT channels
- Bearing of the COSPAS SARSAT signal on all 19 channels
- Full manual operational functionality at installation site for calibration and service
- Fast frequency monitoring by scanning of up to 8 frequencies
- Easy and reasonably priced installation as no patched HF antenna cable has to be used
- Effective remote operation via LAN / Ethernet or RS-232
- Extreme compact, rugged and lightweight DF antenna for easy installation and use in maritime weather conditions
- Maintenance-free due to no moving parts
- Lightning protection rod

*The Leader in DF*

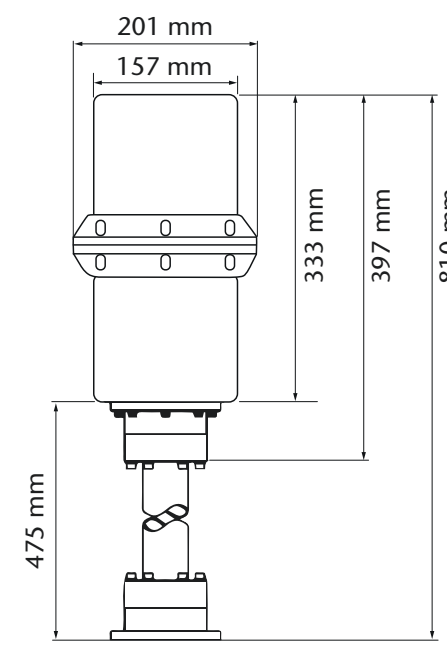
### Mechanical characteristics

	Display Control Unit (DCU)	Antenna Unit (AU)
Weight:	Approx. 5,900 g	Approx. 5,200 g
Operating temperature:	-20°C to + 60°C	-40°C to + 60°C
Storage temperature:	-40°C to + 80°C	-40°C to + 80°C
Ingress protection:		IP 67

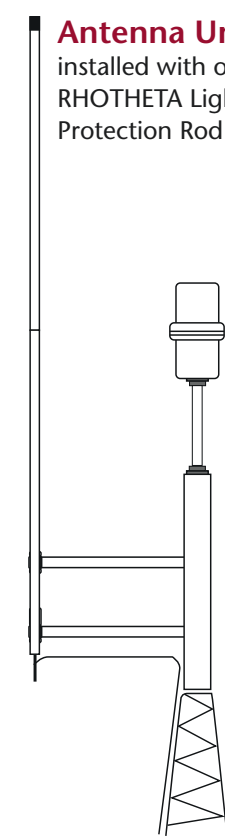
#### Display Control Unit



#### Antenna Unit



#### Antenna Unit installed with optional RHO THETA Lightning Protection Rod



All product specifications subject to change without notice.



Coordinates: N 47.6842° / E 11.1982° / (WGS 84)

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# Wideband Radio Direction Finder RT-800

The compact solution for VTS coastal surveillance, mobile ATC stations and SAR purposes



*The Leader in DF*



## The product

The RT-800 is a radio direction finder for stationary coast surveillance and identification of ships transmitting on the VHF radio band.

The bearing information from transmitters can be correlated with the corresponding radar target and AIS-position information at a VTS / (Vessel Traffic Service) center.

Two or more RT-800 systems on different locations can be used to locate a ship's exact position by triangulation.

The RT-800 is also a perfect solution for mobile ATC stations. This direction finder can operate on frequency bands as follows:

- Civil VHF air band from 118 to 137 MHz
- Extended Marine VHF band from 137 to 225 MHz
- Military air band from 225 to 400 MHz
- All 19 COSPAS-SARSAT frequencies between 406.022 to 406.076 MHz
- UHF FM band from 406.100 to 470.000 MHz



## Technical data

Method of bearing:	Doppler principle (3 kHz rotational frequency, right / left rotation)	
Bearing accuracy <sup>1</sup> :	±2° RMS	
Internal resolution:	1°	
Sensitivity:	RF voltage at receiver input (50 Ω): VHF, UHF < 100 nV; COSPAS-SARSAT 406 MHz < 150 nV	
Frequency stability:	±2.0 ppm ( $\Delta f/f = \pm 2 \times 10^{-6}$ ) (in temperature range -30°C to +80°C)	
Receiving frequencies, frequency ranges:	Standard Version 118.000 to 123.975 MHz (8.33 kHz) 154.000 to 162.995 MHz (5.00 kHz) 240.000 to 245.975 MHz (25.0 kHz) 400.000 to 406.093 MHz	Optional extended frequency range F1: 118.000 to 136.993 MHz (AM 8.33kHz) F2: 137.000 to 224.995 MHz (FM/5.0 kHz) F3: 225.000 to 399.975 MHz (AM/25.0 kHz) F4: 406.100 to 470.000 MHz (FM/5.0 kHz)
Marine channels:	Channel 0 ... 28 / 60 ... 88 (ship / coast stations)	
COSPAS-SARSAT freq.:	19 Channel A to S (406.022 to 406.076 MHz)	
COSPAS-SARSAT fast scan	Full automatic detection of any active COSPAS-SARSAT channel A to S within 400 ms	
COSPAS-SARSAT decoding:	Reception and decoding of COSPAS-SARSAT data signal (112 or 144 bit, 400 baud, biphasic L encoded, phase modulation, with Bose-Chaudhuri-Hocquenghem error-correcting code, specified according to COSPAS-SARSAT)	
Monitoring / Scanning modes:	<p>Monitoring</p> <ul style="list-style-type: none"> <li>- 121.5 MHz and three selectable frequencies are monitored during normal operation.</li> </ul> <p>Standby:</p> <ul style="list-style-type: none"> <li>- COSPAS-SARSAT and 121.5 MHz emergency frequencies are monitored.</li> </ul> <p>Fast Marine Ship Band Scan:</p> <ul style="list-style-type: none"> <li>- Fast scan (without gap) of all ship channels [01 ... 88] within approx. 3 sec.</li> </ul> <p>Fast Channel Scan:</p> <ul style="list-style-type: none"> <li>- Fast scan of up to eight freely selectable frequencies / channels within approx. 2 sec.</li> </ul>	
Signal filtering:	All emergency frequencies can be filtered for ELT modulation (false alarms disabled)	
Bearable modulation:	A3E, F3E, A3X (ELT modulation), F1D, G2D, COSPAS-SARSAT Bearing largely independent of modulation	
Polarization:	Vertical	
Polarization error:	≤ 5° at 60° field vector rotation	
Garbling cone:	Approx. 30° to the vertical	
Response time <sup>2</sup> :	≤ 50 ms (with sufficient reception field strength)	
TFT graphic display:	800 x 480 pixel (max. brightness 950 cd/m <sup>2</sup> , continuously / automatic control)	
Operating voltage:	85 to 264 V <sub>AC</sub> / 47 to 63 Hz; 12 to 28 V <sub>DC</sub>	

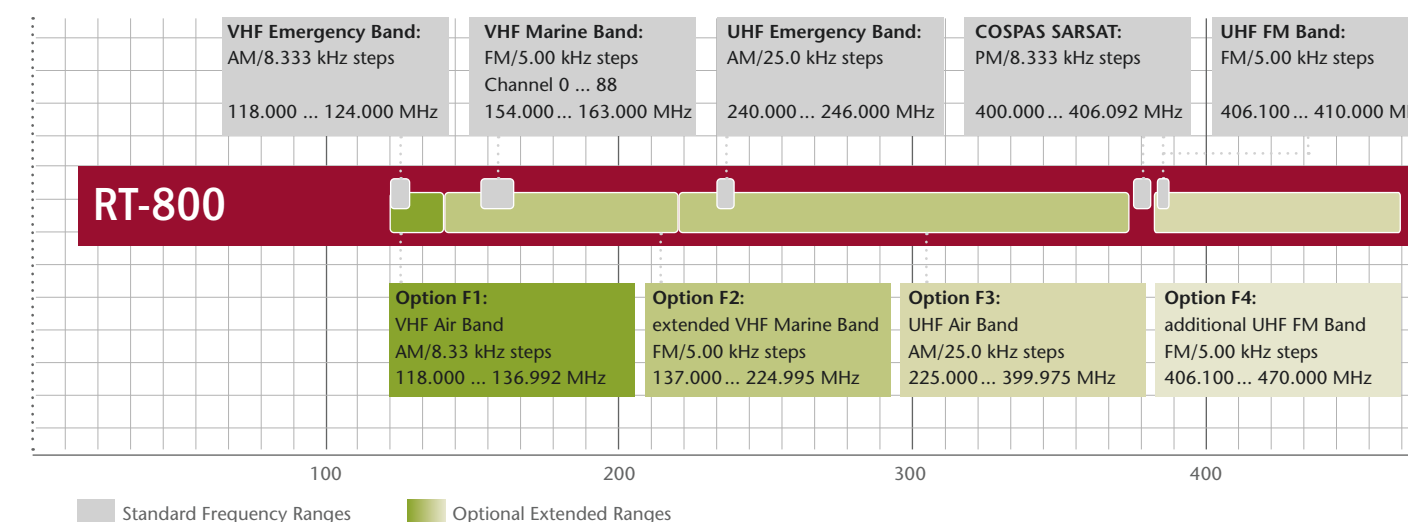
<sup>1</sup> With undisturbed wave field and sufficient field strength. Measured by changing the angle of incidence with the antenna rotating on a revolving table in order to eliminate environment influences on the result.

<sup>2</sup> Very weak signals can increase response time considerably!

## Technical data

Power consumption:	Nominal 30 W @ 230 V <sub>AC</sub>
Audio out:	Internal speaker 4 W Line out (adjustable from 100 mV <sub>pp</sub> to 2000 mV <sub>pp</sub> )
Interface:	Ethernet Interface for complete remote control (NMEA Protocol: Input/Output) Ethernet Interface for IP streaming audio out RS232 (NMEA Protocol: Input/Output) PTT input (for ground transmitter suppression) Alarm Relay Output Input for optional external GPS (RS422)
Options:	Software "DF Commander" Lightning Protection Rod UTC time base

## Frequency options



## DCU bearing display and examples of different pages

