



Wideband Radio Direction Finder RT-600 (SAR-DF 517)

SAR & Law Enforcement
to locate and decode
COSPAS-SARSAT



The Leader in DF

The product

The RT-600/SAR-DF 517 is an advanced wideband radio direction finder system for airborne applications, capable of capturing and indicating directions to any source of an emergency signal on VHF, UHF, all nineteen 406 MHz COSPAS-SARSAT frequencies and all 88 maritime channels. The system can be extended by additional frequency bands to cover a frequency range from 118

to 470 MHz at its full stage of extension. For the airborne law enforcement community, RHOTHETA developed a special law enforcement version of RT-600/SAR-DF 517 which supports LoJack Stolen Vehicle Recovery Technology by providing the direction to the target and displaying the LoJack reply code. It is also capable of tracking the Electronic Tracking System (ETS) beacons.

The sophisticated software provides significantly improved tracking capability over conventional tracking equipment. It reduces search time without external support.

RHOTHETA's reliable airborne direction finders have been proved in thousands of missions worldwide under practically all climatic conditions.





RT-600 (SAR-DF 517) All features at a glance

- Modern and advanced wideband direction finding system for airborne applications
- Easy installation, no RF cable connection required
- Extremely compact and robust antenna system
- Short response time due to high antenna rotation frequency
- Compact 80 mm display unit fits into a standard aircraft instrument
- NVIS Green B compatible Display Control Unit for NVG cockpit available
- Auto-scan of all COSPAS-SARSAT channels within 400 ms
- Decoding/display of the COSPAS-SARSAT messages
- Fast scan function of complete marine ship band
- LoJack reply code decoding
- Law Enforcement scan mode for autodetection of active LoJack and ETS transmitters
- Auxiliary automatic squelch mode for easy operation

The Leader in DF

Technical data

Method of bearing:	Doppler principle (3 kHz rotational frequency, right / left rotation)		
Bearing accuracy:	±5° RMS ¹		
Internal resolution:	1°		
Bearing Sensitivity:	VHF Air/Emergency:	±5° bearing fluctuation	≤ 6 μV/m / 4 μV/m (typical)
	VHF Marine Band:	±5° bearing fluctuation	≤ 5 μV/m / 2.5 μV/m (typical)
	LoJack Decoding	±5° bearing fluctuation	≤ 5 μV/m / 2 μV/m (typical)
Frequency stability:	±2.0 ppm (b, f/f = ±2 X 10 ⁻⁶)		
Reception frequencies, SAR version (standard):	VHF Emergency Band:	118.000 to 124.000 MHz (8.33 kHz steps, AM)	
	VHF Marine Band:	154.000 to 163.000 MHz (5.00 kHz steps, FM)	
	UHF Emergency Band:	240.000 to 246.000 MHz (25.00 kHz steps, AM)	
	UHF FM-Band:	406.100 to 410.000 MHz (5.00 kHz steps, FM)	
	COSPAS-SARSAT:	400.000 to 406.092 MHz Incl. 406.022 to 406.076 MHz (Channel A...S)	
	Additional Frequency Options:		
	F1 VHF Air Band:	118.000 to 136.992 MHz (8.33 kHz steps, AM)	
	F2 extended VHF Marine Band:	137.000 to 224.995 MHz (5.00 kHz steps, FM)	
	F3 extended UHF Air Band:	225.000 to 399.975 MHz (25.00 kHz steps, AM)	
	F4 additional UHF FM Band:	406.100 to 470.000 MHz (5.00 kHz steps, FM)	
Reception frequencies, Law Enforcement version:	VHF Emergency Band:	118.000 to 124.000 MHz (8.33 kHz steps, AM)	
	VHF Marine Band:	154.000 to 163.000 MHz (5.00 kHz steps, FM)	
	LoJack:	164.000 to 174.000 MHz (12.5 kHz steps)	
	ETS:	216.000 to 220.000 MHz (10/12.5 kHz steps, FM)	
	COSPAS-SARSAT:	400.000 to 406.092 MHz Incl. 406.022 to 406.076 MHz (Channel A...S)	
	Additional Frequency Options:		
	F1 VHF Air Band:	118.000 to 136.992 MHz (8.33 kHz steps, AM)	
	F2 extended VHF Marine Band:	137.000 to 163.000 MHz (5.00 kHz steps, FM)	
COSPAS-SARSAT freq.:	Channels A to S (406.022 to 406.076 MHz)		
COSPAS-SARSAT	Full automatic detection of any active COSPAS-SARSAT channel A to S within 400 ms		
Fast scan mode:			
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 C/S T.001 October 1999)		
LoJack decoding:	Selectable LoJack ID display and selective active filtering		
Special scanning modes:	Complete maritime ship band scanning within 3 s		
Bearable modulation:	A3E, F3E, A3X (ELT modulation), F1 D, G2D, COSPAS-SARSAT Bearing largely independent of modulation		
Polarization:	Vertical		
Polarization error:	≤ 5° at 60° field vector rotation		
Cone of silence:	30° to the vertical		
Response time ² :	≤ 50 ms (with sufficient reception field strength)		

¹ 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 environmental influences on the results. No modulation.

² Very weak signals can increase response time considerably!

LC-graphic display: 128 x 64 pixels, supertwist / transfective, extended range of temperature, dark-blue display on yellow-green background, background light.

NVG cockpit design: Freely adjustable (exponential) dimming of brightness

Operating voltage: Fully compatible NVIS Green B display Control Unit optional

Current consumption:

LCD-background light "OFF" :	500 mA at 12 V DC
	250 mA at 24 V DC
LCD-background light at 100 %:	750 mA at 12 V DC
	350 mA at 24 V DC
Option NVG, LCD-background light at 100 %:	900 mA at 12 V DC
	400 mA at 24 V DC
RT-600 Light (AU only):	200 mA at 12 V DC
	100 mA at 24 V DC

Audio out: External speaker 2 W (4 Ω)
Maximum output voltage 8 V pp at maximum volume

Interface: Serial interface RS-232 (9600 baud, 8 data bits, 1 stop bit, no parity)
Analog dimming input voltage for legends
Night/NVG input dimming line for LCD-background light

Options:

- NVIS Display
- ARING 429 Adapter
- Ramp Tester
- Antenna light weight version for UAV (RT-600 Light)

Examples of different DCU pages



COSPAS-SARSAT scanning



COSPAS-SARSAT decoding



Frequency selection



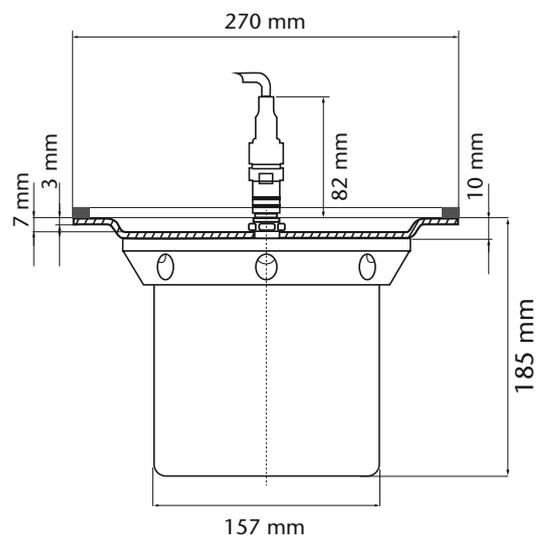
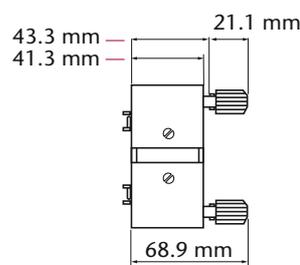
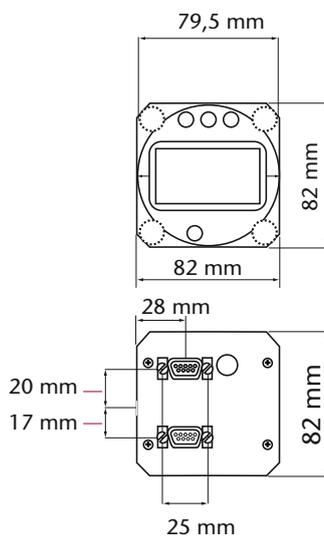
Lojack ID for selective filter



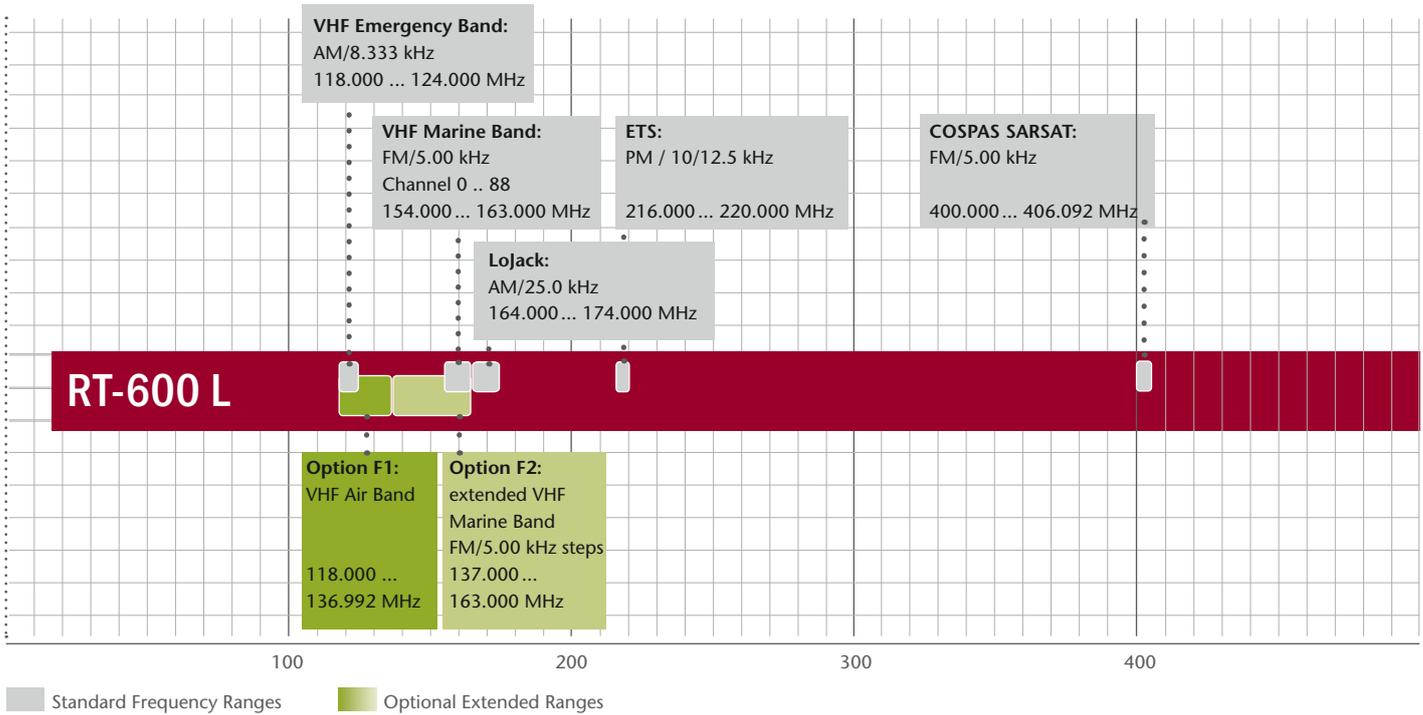
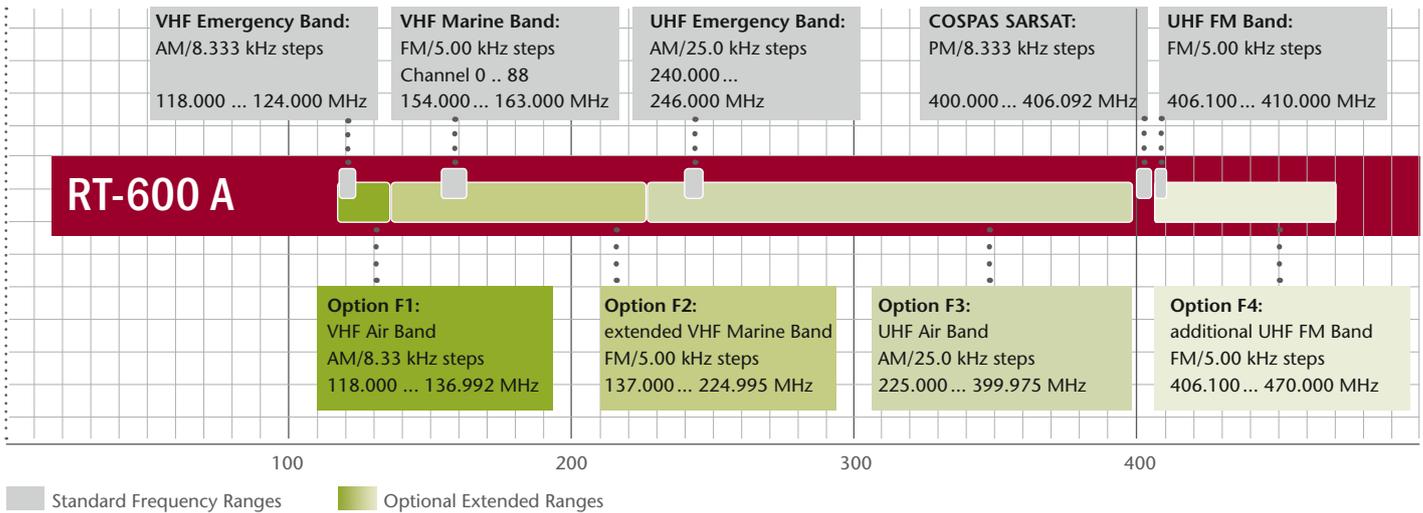
Frequency memory page

Mechanical characteristics

	Display Control Unit (DCU):	Antenna Unit (AU):
Weight:	250 g	2,000 g
Operating temperature:	-20°C to +60°C	-40°C to +60°C
Storage temperature:	-30°C to +80°C	-55°C to +80°C
Ingress protection:		IP 67
Dimensions:	82 mm x 82 mm x 43 mm	Ø 270 mm x 185 mm



Frequency options



All product specifications subject to change without notice. LoJack is a registered trademark of LoJack Cooperation.



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

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