



RHO

Elektronik GmbH

THETA

The Leader in DF

Wideband Airborne Radio Direction Finder for SAR & Law Enforcement, 118 - 470 MHz

RT-600/SAR-DF 517

To locate and decode COSPAS-SARSAT signals on 406 MHz



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 19 406 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

the Lojack Stolen Vehicle Recovery Technology, by providing 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 tracing 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.

Features

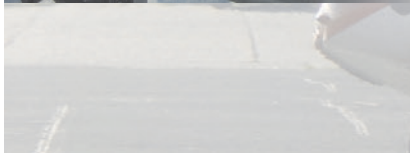
- Modern and advanced widebanded direction finding system for airborne applications
- Easy installation, no RF cable connection required
- Extremely compact and robust antenna system
- Short response time due to high antenna rotation frequency
- Ultra compact display unit fits into a standard aircraft 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 auto-detection of active LoJack and ETS transmitters
- Auxiliary automatic squelch mode for easy operation



The RT-600/SAR-DF 517 fulfills all current SAR requirements. COSPAS-SARSAT channels A..S, VHF & UHF Air Band, Channel 16 of maritime radio.



Law Enforcement version for bearing LoJack and ETS signals in addition to COSPAS-SARSAT and VHF emergency frequencies.



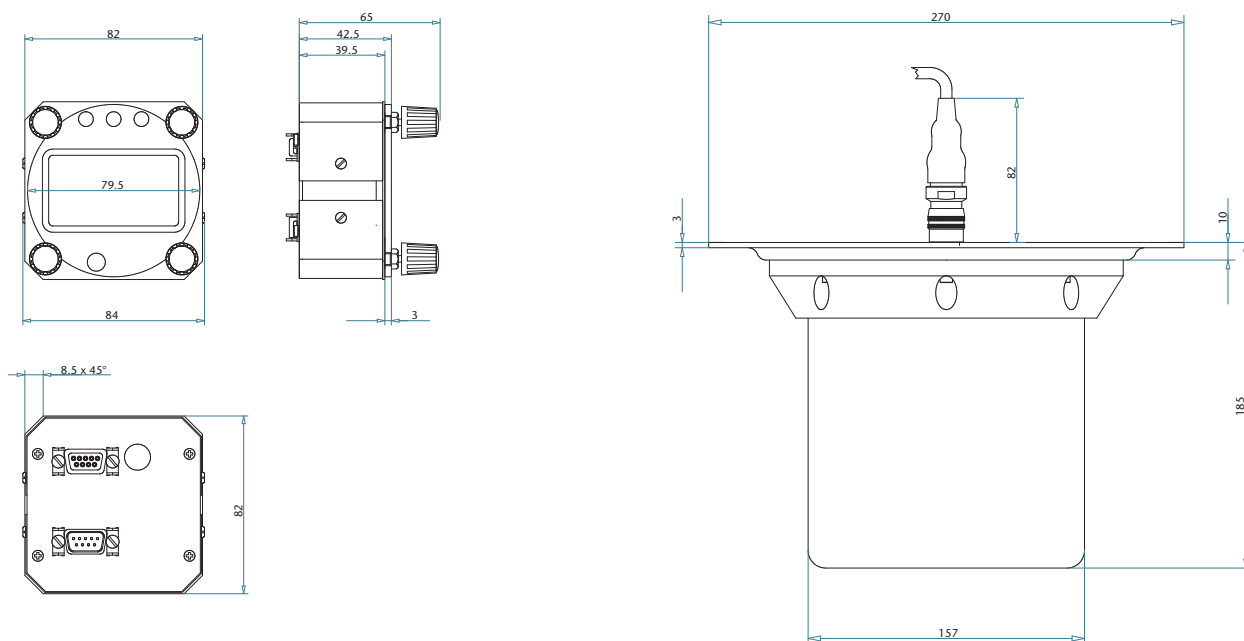
Tecchnical data

Method of bearing:	Doppler principle (3 kHz rotational frequency, right / left rotation)		
Bearing accuracy ¹ :	±5° RMS		
Internal resolution:	1°		
Bearing Sensitivity:	VHF Air/Emergency:	≤ 2.5 μV/m	(typical)
	VHF Marine:	≤ 2.5 μV/m	(typical)
	UHF Emergency and ETS:	≤ 4 μV/m	(typical)
	COSPAS-SARSAT	≤ 4 μV/m	(typical)
	LoJack Decoding (50 % Message Error Rate) and bearing:	5 μV/m	(typical)
Frequency stability:	±2.0 ppm ($\Delta f/f = \pm 2 \times 10^{-6}$)		
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 Including 406.022 to 406.076 MHz (Channel A .. S)	
	<u>Additional Frequency Options:</u>		
	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) (channel 16 selectable via channel No.)	
	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,AM)	
	COSPAS-SARSAT:	400.000 to 406.092 MHz Including 406.022 to 406.076 MHz (Channel A .. S)	
	<u>Additional Frequency Options:</u>		
	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) (channel 16 selectable via channel No.)	
COSPAS-SARSAT freq.:	Channels A to S	(406.022 to 406.076MHz)	
COSPAS-SARSAT fast scan mode:	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 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), 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 ² :	≤50 ms (with sufficient reception field strength)		

LC-graphic display:	128 x 64 pixels, supertwist / transfective, extended range of temperature, dark-blue display on yellow-green background, background light. Freely adjustable (exponential) dimming of brightness
NVG cockpit design:	Fully compatible NVIS Green B display Control Unit optional
Operating voltage:	27.5 V nominal / 12 to 35 V DC
Current consumption:	LCD-background light Off: max. 500 mA (12 V DC) / 250 mA (24 V DC) LCD-background light 100 %: max. 750 mA (12 V DC) / 350 mA (24 V DC) LCD-background light 100 %, NVG Option: max. 900 mA (12 V DC) / 400 mA (24 V DC)
Audio out:	External speaker approx. 2 W (4 Ω) Maximum output voltage approx. 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

Mechanical characteristic

	Display Control Unit (DCU):	Antenna Unit (AU):
Weight:	Approx. 250 g	Approx. 2000 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



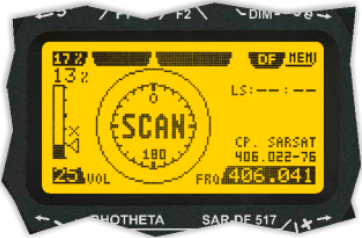
¹ With undisturbed wave field and sufficient field strength. Measured by changing the angle of incidence with the antenna rotating on a revolving table in order to eliminate environmental influences on the results. No modulation.

³ Very weak signals can increase response time considerably!

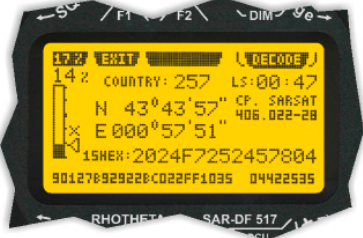
Examples of different DCU pages



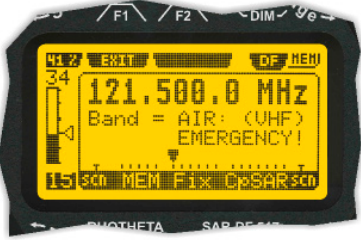
Standard bearing display



COSPAS-SARSAT scanning



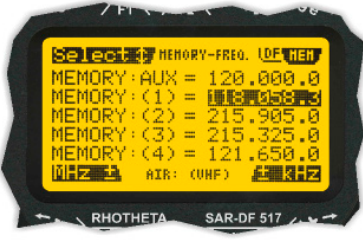
COSPAS-SARSAT decoding



Frequency selection



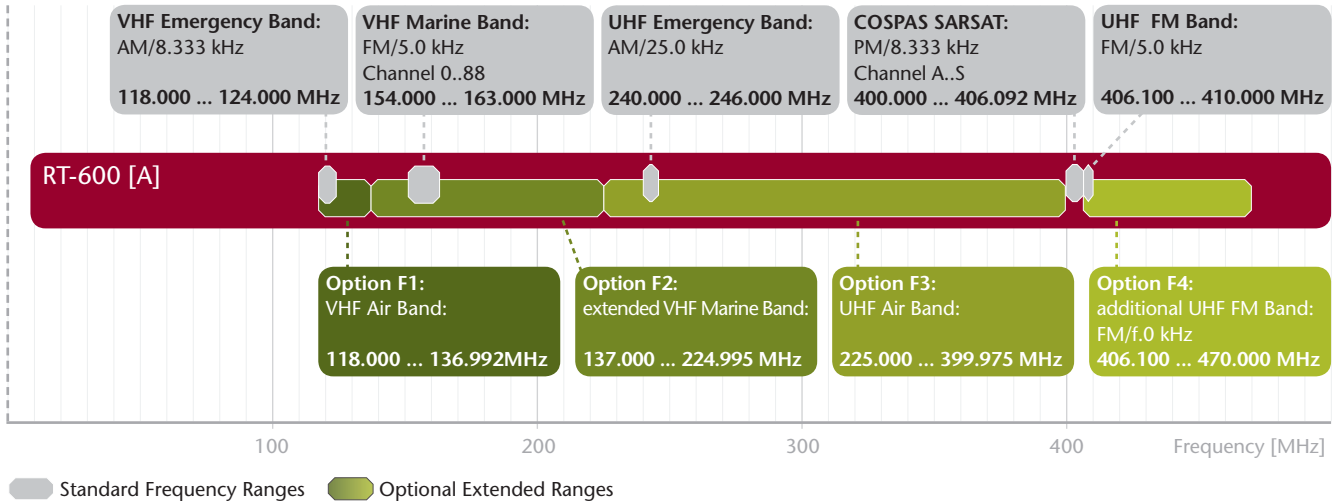
LoJack ID for selective filter



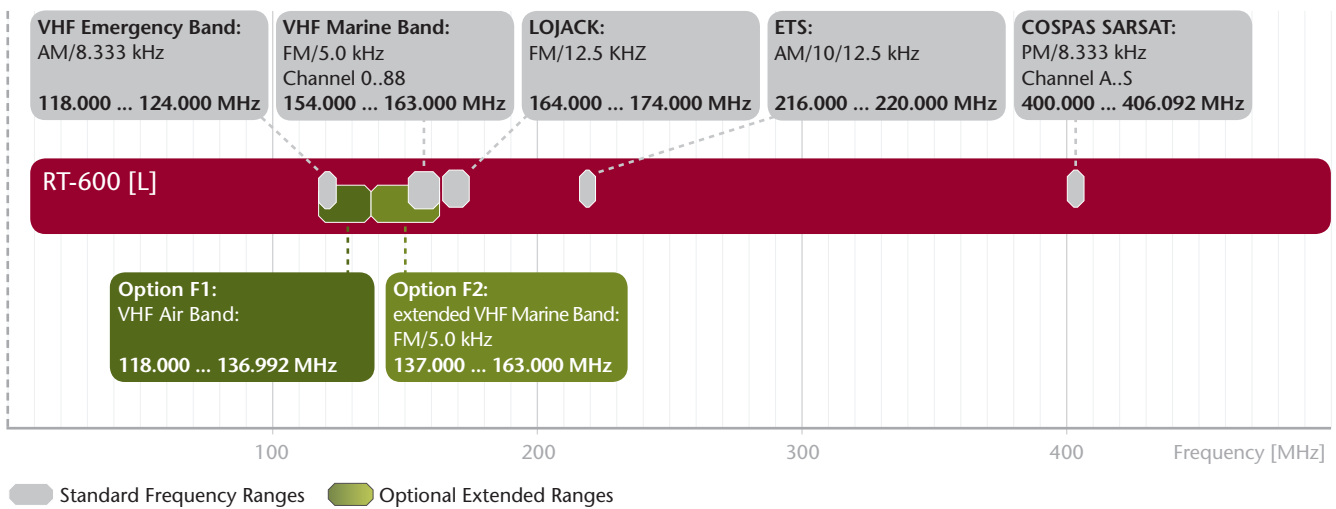
Frequency memory page



SAR version (Standard)



LAW Enforcement version



All product specifications subject to change without notice. Lojack is a registered trademark of Lojack Corporation.

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