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SARBE G2R Evo

Personal Locator Beacon

Innovation, quality and flexibility are built into the SARBE G2R Evo. The most advanced product ever to bring a new level of performance to the Personal Locator Beacon technologies.

SARBE: Innovation since 1944
Orolia's SARBE brand has been at the forefront of innovation in life saving Locator Beacons and critical communications for more than 70 years. Its products are in Tri-Force use on every continent.



Key features

- Software defined dual role Personal Locator Beacon
- Peacetime role – Search and Rescue (SAR)
- Combat role – Combat Search and Rescue (CSAR)
- Cospas-Sarsat approved
- Precise global location with GNSS
- 406 MHz digital data transmissions
- 121.5 MHz & 243 MHz SAR homing/voice frequencies
- Programmable training channels
- 3000 programmable CSAR frequencies
- Automatic or manual activation
- Encryption for secure data communication
- Mission abort function prevents unauthorized use
- One touch silence
- Automatically deployed antenna options
- Orientable pull-pin activation mechanism
- Infra-Red programming
- Combat rescue system with SarFind
- Quick change “Twist Fit” battery
- 5-year battery life (unused)

CSAR LPI/LPD

In CSAR mode, a short, randomised burst data transmission, along with the ability to stop and restart data transmissions on demand ensures extremely low probability of interception/detection (LPI/LPD).

Automatic beacon activation and antenna deployment

SARBE Personal Locator Beacons are carried by aircrew around the world as part of their essential flight equipment.

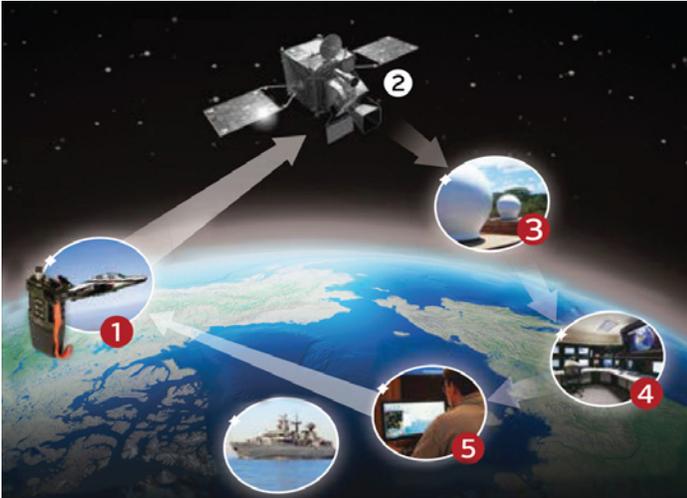
To assist in the fast location of downed aircrew after an ejection has taken place, SARBE have developed a system which automatically activates the beacon and deploys the antenna into the optimum position.

By automating the activation of the beacon it ensures that even where aircrew are unconscious or injured, SAR transmissions will be initiated immediately, with no human intervention required.

G2R Evo can be configured to operate with any ejection seat mechanism and the orientable activation pull-pin ensures total flexibility when positioning the beacon on the aircrew. The antennas are supplied ready for mounting on to most life preservers.

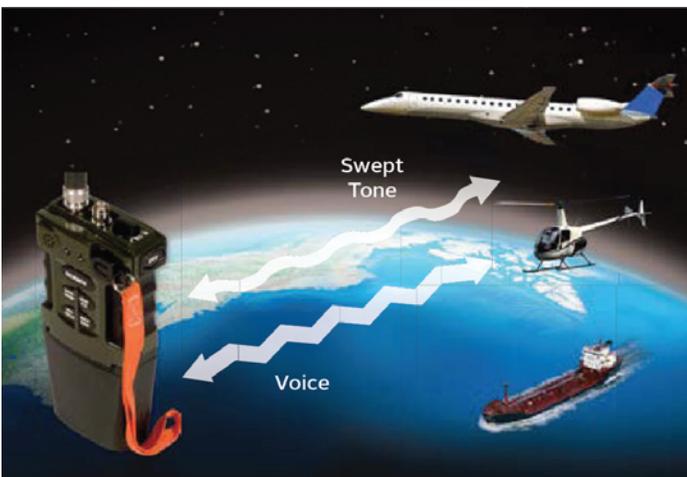
Our team of engineers have a wealth of experience in resolving complex issues relating to antenna deployment and performance. Our problem solving skills in this area are un-paralleled within the field of Search and Rescue Beacons.

How the end-to-end satellite-based SAR Ecosystem works



1. A **beacon** distress signal is sent from aircraft, marine vessel or individual
2. Beacon positioning/location data is relayed by satellite communications to satellite ground stations or Local User Terminals (LUTs)
3. The **Local User Terminal** computes the location before sending alerts to the appropriate Mission Control Centers (MCC)
4. The **Mission Control Center** collects, stores and sorts the data received from LUTs and other MCCs and distributes alerts to associated Rescue Coordination Centers (RCC)
5. The **Rescue Coordination Center** notifies and coordinates emergency response/rescue teams

* Items in **red** are supplied by Orolia



Features of 121.5 MHz, 243 MHz Local

- Provides local communication to civilian and military aircraft and shipping Mission abort function prevents unauthorized use



Features of 225 MHz - 300 MHz Private

- Provides local communication to military aircraft and shipping carrying a SarFind decoder
- Data signal is encrypted to ensure LPI/LPD and carries the beacon identity and GPS location

Technical Specifications

RF Specification for SAR, CSAR and trainer modes

SAR mode

Primary frequencies:	406 MHz – COSPAS-SARSAT data (identity and GNSS location)
	121.5 MHz, 243 MHz – swept tone, voice, Sarfind data (Identity, GPS location, time of fix)
	282.8 MHz – SARFind data (Identity, GPS location, time of fix)
Power output:	406 MHz 5 watts
	121.5 MHz 200 mW
	243 MHz 400 mW
	282.8 MHz 500 mW

CSAR mode

Additional combat frequencies:	3000 channels between 225 MHz & 300 MHz voice, SarFind data (Identity, GNSS Location, time of fix)
Power output:	282.8 MHz 500 mW
Data burst:	300 ms, randomized
Encryption:	256 bit as standart

Trainer mode

Offset frequencies:	between 119 MHz & 124 MHz – voice and swept tone
	between 238 MHz & 248 MHz – voice and swept tone
Power output:	200 mW
	400 mW

RF specifications common to all modes

TX/RX Audio response	300 Hz - 2500 Hz
TX/RX Distortion	Less than 10% @ 85% modulation 4 μV VHF + UHF
RX Sensitivity	25 mW
RX Audio output	6 dB down, @ ±15 KHz
RX IF selectivity	> 85% AM swept tone
TX Modulation	-40 dB Below carrier
TX Harmonics	

Part Number

Part Number (P/N)	101167-2
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Mechanical Specification

Weight	723 g including battery and Tx Antenna
Dimensions	H180 mm x W79 mm x D42 mm
Waterproof	To depth up to 10 m
Operational temp.	-40 °C to +55 °C
Storage temp.	-55 °C to +70 °C
Battery type	6 V LiMnO2 - 2 'D' cells
Battery life	5 Years
Endurance	>24 hrs @-20 °C depending on role/ use
Activation	Rotary Control switch, Salt water, pull pin

GNSS Specifications

Type	50 channel C/A code
Transmission frequency	Transmits GNSS co-ordinates on VHF, UHF and 406 MHz
Coordinate systems	Geodetic lat / long WGS 84
Location accuracy	10 m with SARFind, 100 m SAR role

