Advanced DF-ing, Tracking and Location Solutions for Public Safety - Search & Rescue Drones

Think of a Drone as a DF antenna tower:

\[ \text{Drone Height} = \text{Radio Horizon} = \text{DF Range} \]

**RT-600 MAIN FEATURES**

- DF sensor designed for search-and-rescue and public safety
- Version "A" for SAR | Version "L" for SAR + Law Enforcement
- Tracking of ELT, PLB, EPIRB, LoJack™, ETS™, COSPAS-SARSAT™, medical, and V/UHF AM/FM transmitters
- Decoding of COSPAS-SARSAT™ and LoJack™ messages
- DF-only drone endurance from 15 to 60+ min depending on UAV
- 600+ RT-600 systems flying in North America alone
- Wide frequency range from 118 to 470 MHz
- Automatic 360° Doppler DF with ±5° rms bearing accuracy
- Easy Integration: RS-485, no RF cables, WiFi and TCP/IP adapters

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**PUBLIC SAFETY - SAR TRANSMITTERS**

- PLB
- ELT
- EPIRB
- LOJACK™
- ETS™
- MEDICAL

**RADIO LINK**

- DATA & AUDIO
- 118 – 470 MHz
- AM - FM – PM

**REMOTE CONTROL STATION**

- GCS
- DF SCOUT™
- DF COMMANDER™

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**ELBIT SYSTEMS**

**SKY ROVER**

**CURSIR**

**DJI**

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**THINK OF A DRONE AS A DF ANTENNA TOWER:**

\[ \text{Drone Height} = \text{Radio Horizon} = \text{DF Range} \]
### Technical Data

<table>
<thead>
<tr>
<th>Method of bearing:</th>
<th>Doppler principle (3 kHz rotational frequency, right / left rotation)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bearing accuracy:</td>
<td>±5° RMS (^1)</td>
</tr>
<tr>
<td>Internal resolution:</td>
<td>1°</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Bearing Sensitivity:</th>
<th>VHF Air/Emergency: ≤ 2.5 µV/m (typical)</th>
<th>VHF Marine: ≤ 2.5 µV/m (typical)</th>
<th>UHF Emergency and ETS: ≤ 4 µV/m (typical)</th>
<th>COSPAS-SARSAT:</th>
<th>LoJack Decoding: (50% Message Error Rate) and bearing: ≤ 5 µV/m (typical)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency stability:</td>
<td>±0.2 ppm (β, σ = ± 2 × 10⁻⁶)</td>
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</tbody>
</table>

### Reception Frequencies, SAR Version (Standard):

<table>
<thead>
<tr>
<th>VHF Emergency Band:</th>
<th>118.000 to 124.000 MHz (8.33 kHz steps, AM)</th>
</tr>
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<tbody>
<tr>
<td>VHF Marine Band:</td>
<td>154.000 to 163.000 MHz (5.00 kHz steps, FM)</td>
</tr>
<tr>
<td>UHF Emergency Band:</td>
<td>240.000 to 246.000 MHz (25.00 kHz steps, AM)</td>
</tr>
<tr>
<td>UHF FM-Band:</td>
<td>406.100 to 410.000 MHz (5.00 kHz steps, FM)</td>
</tr>
<tr>
<td>COSPAS-SARSAT:</td>
<td>400.000 to 406.092 MHz</td>
</tr>
<tr>
<td>Additional Frequency Options:</td>
<td>Incl. 406.022 to 406.076 MHz (Channel A…S)</td>
</tr>
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### Reception Frequencies, Law Enforcement Version:

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<th>VHF Emergency Band:</th>
<th>118.000 to 124.000 MHz (8.33 kHz steps, AM)</th>
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<tr>
<td>VHF Marine Band:</td>
<td>154.000 to 163.000 MHz (5.00 kHz steps, FM)</td>
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<tr>
<td>LoJack:</td>
<td>164.000 to 174.000 MHz (12.5 kHz steps)</td>
</tr>
<tr>
<td>ETS:</td>
<td>216.000 to 220.000 MHz (10/12.5 kHz steps, FM)</td>
</tr>
<tr>
<td>COSPAS-SARSAT:</td>
<td>400.000 to 406.092 MHz</td>
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<td>Additional Frequency Options:</td>
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</table>

### 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, biphase L encoded, phase modulation, with Basa-Chaudhuri-Hocquenghem error-correcting code, specified according to COSPAS-SARSAT C/S T001 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

### Polarization:

- Vertical

### Polarization Error:

- ≤ 5° at 60° field vector rotation

### Garbling Cone:

- Approx. 30° to the vertical

### Response Time:

- ≤ 50 ms (with sufficient reception field strength)

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\(^1\) 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!