MFRAD is a compact and advanced radar system featuring short to medium-range air and surface target surveillance along with weapon systems target designation. Developed from proven and state-of-the-art technologies, MFRAD utilizes an extremely lightweight antenna with reduced electrical power consumption and very high reliability.

- MFRAD is a truly 3D multi-mission radar purposely designed for coastal surveillance and shipborne applications;
- MFRAD offers outstanding performance in coastal and maritime domain in surveillance and tracking of surface and short range air targets, specially fast and low-flying aircraft, helo and UAV with limited installation requirements;
- In shipborne installations, MFRAD fulfills the role of secondary search radar for large-medium combatant ships and of primary search radar for ship classes like corvettes and Offshore Patrol Vessel (OPV);
- In addition, MFRAD provides reliable final approach and deck landing guidance for helo during day or night operations and in adverse weather conditions;
- MFRAD anticlutter and ECCM capabilities give a significant contribution to tactical situational awareness;
- Compliance to MIL-STD regulation.

**Operational Features**
- Simultaneous air short range and surface surveillance and tracking;
- Solid state technology for high reliability and availability;
- Digital pulse compression with fully coherent pulse doppler processing for clutter elimination;
- Frequency diversity-agility and PRF variation;
- Low Probability of Intercept (LPI) capability;
- Full BITE and monitoring capabilities;
- Lightweight antenna for installation in medium-small ships or on elevated coastal surveillance towers or on mobile ground systems;
- Ready to integration with IFF interrogator antenna;
- Electronic stabilization in naval applications;
- Very competitive acquisition, operation, maintenance and life-cycle costs.
### Main operational capabilities

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum instrumented range</td>
<td>&gt; 96 n.m.</td>
</tr>
<tr>
<td>Maximum elevation coverage</td>
<td>&gt; 60°</td>
</tr>
<tr>
<td>Minimum range</td>
<td>&lt; 40 m</td>
</tr>
<tr>
<td>3D tracking capacity (air &amp; surface)</td>
<td>&gt; 300 targets</td>
</tr>
<tr>
<td>Elevation accuracy</td>
<td>≤ 0.8° (rms)</td>
</tr>
</tbody>
</table>

### Technical Characteristics

**Six operational surface and air main mode**
- Fully automatic detection and tracking of air and surface targets
- Digital beamforming in elevation

**Transmitter**

- **Frequency band:** X(I)
- **Type:** Solid state TRM
- Power management in surface mode per LPI operations
- Frequency agility

**Antenna**

- Low weight design including optional co-mounted IFF interrogator antenna: < 400 kg (radome is not necessary)
- Horizontal beamwidth: < 1,25°
- Antenna rotation rate: programmable 10-60 RPM
- Electronic Stabilization: for ship movements up to 20°
- Sidelobes level: < -25 db (inside ± 10°) < -30 dB (outside)
- Sidelobe blanking
- Air cooled

This brochure should not be considered a contractual offer to sell. The specifications given herein may be changed by the manufacturer, GEM elettronica S.r.l., without notice.