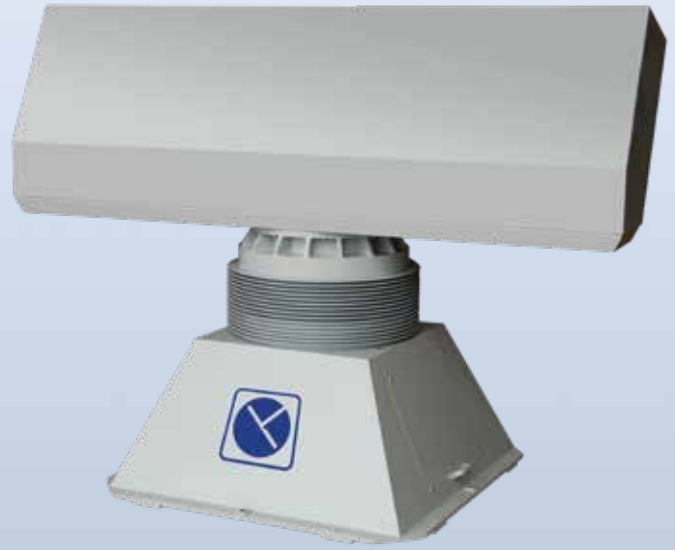


# COLUMBUS

## MFRAD 3D X-BAND

### NAVAL and COASTAL SURFACE AIR SURVEILLANCE RADAR



COLUMBUS 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, COLUMBUS utilizes an extremely lightweight antenna with reduced electrical power consumption and very high reliability.

- COLUMBUS is a truly 3D multi-mission radar purposely designed for coastal surveillance and shipborne applications;
- COLUMBUS 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, COLUMBUS 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, COLUMBUS provides reliable final approach and deck landing guidance for helo during day or night operations and in adverse weather conditions;
- COLUMBUS 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.





# COLUMBUS



Main operational capabilities	AIR channel	SURFACE channel
Maximum instrumented range	100 Km	96 n.m.
Maximum elevation coverage	> 60°	NA
Minimum range	< 40 m	
Tracking capacity	300 targets	600 targets
Elevation accuracy	< 0.5° (rms)	NA

## Technical Characteristics

- More than six operational surface and air modes
- Sector scanning 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 for LPI operations
- Frequency agility

## Antenna

Low weight design <i>including optional co-mounted IFF interrogator antenna</i>	400 kg 420 kg
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	Yes
Cooling	Forced air

Surveillance & Security

Guidance, Navigation & Positioning

Military & Defence

Marine Electronics

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

