LEONARDO ELECTRONICS

GRIFO E

Fire Control E-Scan
Pulse Doppler Multimode Airborne Radar

With over 60 years of experience in radar design, development and production, leading in the airborne radar market, we deliver truly state-of-the-art radar systems.

With over 450 units sold and more than 100,000 operational flight hours, the GRIFO Radar family, a fourth-generation X-band coherent pulse-Doppler multimode-multirole fire-control radar, provides advanced performance to new and upgraded aircraft.

The GRIFO E is the latest version of the GRIFO Radar Family and features a wider set of advanced and up to date capabilities and provides remarkable levels of situational awareness.

Furthermore, thanks to its modular architecture, based on a configurable number of compact Line Replaceable Units, GRIFO E can be easily customised and integrated adapting it to platform constraints.

The combination of cutting edge-technologies and modularity makes GRIFO E a powerful fire control radar that can be proposed for any Fighter or LCA.

KEY FEATURES

- → AESA with high-efficiency low-consumption GaN technology
- → Multi-mode, multi-role X-band
- → Multiple channels fully pulse Doppler processed
- → High-speed DSP capacity
- → Simultaneous processing of modes
- → Full set of ECCM provisions
- → Tracking accuracy supporting missile release and guidance
- → Growth capability to extend the existing features, including sensor fusion with IRST
- → High scalability through absorption/cooling tuning/ adjustment to meet aircraft constraints
- → High reliability for reduced maintenance and lower through-life support costs
- → Low overall weight and consumption

LEONARDO

OPERATIONAL BENEFITS

- → Broad suite of field proven air-to-air, air-to-surface and navigation modes supporting air defence and strike missions
- → Long range detection and tracking of multiple targets in all scenarios: look-up and look-down, any altitude, any aspect
- → High resolution imaging: sub-metric SAR, MTI® on SAR and ISAR
- → Wide scan sector in azimuth and elevation
- → Fully controlled through avionic bus, for HOTAS and HMD designation
- → Modern, effective, flexible, and operationally proven.

DESIGN BENEFITS

- → Multiple channel coherent receiver for advanced adaptive radar processing techniques
- → Air/liquid cooled
- → Wideband waveform for excellent high resolution performance
- → Four waveforms (LPRF, MPRF, MPRF look-up, HPRF), all including range and velocity de-stagger for optimal target detection in any clutter condition
- → Modular software architecture for radar modes update and customisation
- → Easily customisable to overcome aircraft limitations (nose dimension, power and cooling)

WEAPON SYSTEM INTEGRATION

- → Multiple target tracking supporting accurate weapon aiming
- → Compatibility with modern IR missiles (e.g. AIM-9L M-X, Python 4)
- → Capable of BVR missile guidance
- → Support of CCIP and CCRP through precise air-to-surface ranging

TECHNICAL CHARACTERISTICS

GENERAL	
Antenna size:	Customisable to optimise installation on aircraft
Weight:	105kg to 160Kg, depending on antenna size
Absorbed power:	3.4kVA to 7kVA, depending on antenna size
Cooling:	Liquid and air cooled
Frequency:	X-band
Scan Coverage:	Exceed. ± 60° (azimuth/elevation)
Key parameters	• Track while scan - 24 targets tracked • Track formation range versus fighter-sized targets from 40NM to 75NM • Look-up detection range versus fighter sized targets from 45NM to 85NM

MODES	
Air-to-Air	• Track & Search Track While Scan/Range While Search (Normal, Adaptive)/Velocity Search/Spot • Multiple Target Track (up to 8 targets): Single target track Situation Awareness Mod Raid assessment
Air Combat	• Air Combat Slewable scan / Vertical / HUD / Boresight / Wide / Narrow
Air-To-Surface	• Real Beam Ground Map • Doppler Beam Sharpening • Synthetic Aperture Radar (SAR), with MTI® • Air-to-Ground Ranging • Fixed Target Track • Ground Moving Target Indicator and Track • Sea Surface Search and Track • Inverse Synthetic Aperture Radar (ISAR) on Seaborne and Airborne targets • Simultaneous A/S-A/A mode
Navigation Support	• Beacon interrogation • Weather Avoidance • Terrain Avoidance (fit for Autom. Terrain Following) • Simultaneous WA/GM
ECCM Capabilities	• Low antenna sidelobes • Guard channel fully processed • Monopulse antenna • Multichannels fully processed for adaptive rejection of multiple Jammers • Low peak power; pulse compression • Random and adaptive frequency agility • DOJ, HOJ and AOJ • Provisions against: Range gate/velocity gate stealers, Noise jammers, CW jammers

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