GRIFO E

Airborne Sensors & Mission Systems

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 customized and integrated adapting it to platform constraints. The combination of the use 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
- Multimode, Multirole X-band
- Multiple channels fully coherently pulse Doppler processed
- High-speed DSP capacity
- Simultaneous processing of modes
- Full set of ECCM provisions
- Tracking accuracy supporting missiles 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

GRIFO-E

OPERATIONAL BENEFITS

- Broad suite of field proven air-to-air, air-to-surface and navigation modes to support 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 customizable to overcome aircraft limitations (nose dimension, power and cooling)

INTEGRATION WITH WEAPON SYSTEM

- 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:	customizable to optimize installation on aircraft
Weight:	105÷160 Kg, depending on antenna size
Absorbed power:	3,4÷7 kVA, depending on antenna size
Cooling	Liquid and air cooled
Frequency:	X-band
Scan Coverage	exceeding ± 60° both in azimuth and elevation

KEY PARAMETERS	
Track while scan	24 targets tracked
Track formation range versus fighter-sized targets	> from 40 to 75 NM
Look-up detection range versus fighter-sized targets	> from 45 to 85 NM

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 Mode – 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

LEONARDO
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