

LEONARDO ELECTRONICS

KRONOS GRAND MOBILE HP

3D FULL AESA MULTI FUNCTIONAL MOBILE RADAR



The KRONOS® GRAND MOBILE HP is the latest version of the KRONOS® GRAND MOBILE radar systems. As all the systems of the KRONOS® radar family it is a high performance multifunctional radar, designed for Air and Missile Surveillance and Defense, both in land and littoral environment to contrast any type of air and missile threat. The GRAND MOBILE HP (High Power) represents a further improvement to the already advanced architectural and technological solutions of the previous version employing new high efficiency GaN (Gallium Nitride) components in the antenna TRMs (Transmit Receive Modules), increasing the detection range more than 30% over the GaAs (Gallium Arsenide) based version. The system also benefits of multiple upgrades derived from 10 years of operational employment around the world, keeping it on the edge of the radar technology. This system has been specifically designed for high tactical mobility and quick strategic deployment. The radar exploits the horizontal and vertical beam steering capability of its Active Electronically Scanned Array (AESA) Antenna to optimise Detection, Tracking, Threat Classification and Missile Guidance against multiple targets. Combined antenna management and signal processing provide for high probability detection and tracking precision, even in heavy clutter. The KRONOS® GRAND MOBILE HP is lodged in an ISO 20 ft standard container and can be made operational in less than 15, also in unprepared sites, using two operators.

KEY FEATURES

- Full AESA Antenna
- Air and surface surveillance
- Weapon Fire Control Support
- Target Classification
- Kill assessment Support
- Monopulse bi-dimensional for high accuracy tracking
- Integrated state-of-the-art IFF transponder.
- Target Tracking Variable Update
- High mobility
- High MTBF with graceful degradation
- Short MTTR for TRM replacement

OPTIONAL COMPONENTS

- C3 shelter to conduct Air surveillance, Air Defence and Coordination Missions
- Redundant Power Generator ISO 20 ft Shelter
- C-RAM Function used with Stared Antenna



MAIN CHARACTERISTICS

AIR AND SURFACE SURVEILLANCE AND TRACKING

- Optimized Surveillance Modes: Defence Mode for fast reaction, Air Surveillance Mode and TBM Mode
- Simultaneous multiple target tracking with update rate up to 1sec for highly maneuvering threats
- Automatic Terrain Following functionality
- Target classification.
- Integrated IFF (Mode 1, 2, 3/A, C, S, 4 and 5).

THREAT ENGAGEMENT

- Track fast initialization (1sec after first detection)
- Weapon cueing and engagement control

SAM WEAPONS CONTROL

- Integrated and certified with third party anti air missiles and firing systems.

ECCM CAPABILITIES

- Emission CONTROL (EMCON)
- Jammer detection
- Wide band high frequency agility
- Automatic Least Jammed Frequency Selection
- Side Lobe Blanking (SLB)
- Track On Jammer (TOJ) and Burn Through (BT)
- Jammer Cancellation
- Main Beam Canceller (MBC) and Side Lobe Canceller (SLC)

COUNTER ROCKET, ARTILLERY AND MORTAR (C RAM OPTION)

- Fire Finder Function for enemy fire detection and location of launch and impact points.
- Fire Direction Function to support friendly fire.

MULTIPLE USER CONTEMPORARY ACCESS

- The radar can be connected and controlled, at the same time, with up to three different C2 centres

RELIABILITY AND MAINTAINABILITY

- No single TX device and High Voltage components
- High reliability and graceful degradation are guaranteed by thousands of Transmit/Receive modules
- Plug in TRMs, low number of spare parts, reuse of digital boards allow easy maintainability.

C3 MODULE (OPTIONAL)

- 3 operator multifunctional consoles available for Radar Control, Surveillance and Weapon operators.
- Operator training sub systems
- Up to 4 HF/VHF/UHF radios with operator intercomand VoIP radio gateways
- Secure Multiple Data Link Processor (M DLP)
- Embedded Power Generator Group with UPS

PERFORMANCE DATA

SURVEILLANCE /TRACKING/ ENGAGEMENT

- Instrumented range:
 - Defence : $\geq 250\text{km}$
 - Air Surveillance: $\geq 300\text{ km}$
- Ceiling (ABT mode) 30,000 m
- Elevation coverage:
 - surveillance mode 90°
 - tracking mode 90°
- Update rate :
 - 1s for engaged air tracks
 - 4s for not engaged air tracks
 - 1s for jammers
- Target RCS: $<0.01\text{m}^2$
- C-RAM (optional): $\pm^\circ 45(\text{azimuth})$, $\pm^\circ 60(\text{elevation})$ FOV
- Total number of tracks: ≥ 500
- Contemporary engaged targets: 30

TECHNICAL MAIN FEATURES

- C-Band
- Active full phased array antenna, TX/RX solid state modules
- Antenna rotation speed: 60rpm
- Beam steering capability:
 - ± 45 in azimuth
 - ± 60 in elevation
- NBC Protection
- Run time fault identification and Location (BITE)

TACTICAL MOBILITY

- 1 Radar system in a standard 20-ft ISO shelter
- 1 (optional) redundant power generator in a standard 20-ft ISO shelter
- 1 (optional) C3 module with 3 operator stations in a standard 20-ft ISO shelter
- Transportable by road, rail, aircraft and ship with commercial platforms
- Deployment time (unprepared sites) $< 15\text{min}/2$ operators
- Radar control completely remotable

RELIABILITY

- MTTR $< 45\text{ min}$ (MIL-HDBK 472)
- Availability $> 0,999$

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