aCHR®
Advanced Compact Hemispheric Radar

The aCHR is a cutting-edge, ground-based, multi-mission radar for Active Protection Systems (APS), Vehicle Protection Systems (VPS), Hostile Fire Detection (HFD), Counter-UAS, and Hemispheric Surveillance operational missions.

This pulse-Doppler, software-defined, S-band radar platform incorporates an AESA antenna and GaN amplifiers with advanced 4D processing capabilities, providing unprecedented clutter handling and multipath mitigation.

The aCHR is a best-of-breed radar with exceptional situational awareness and survivability during combat that offers superior SWaP-C and On-The-Move operation capabilities.
**aCHR MAIN ADVANTAGES**

- Combat proven, TRL-9, at the heart of mobile APS/VPS/C-UAS systems
- Ballistic survivability by antenna & radome construction
- Complete Dynamic Air Situational Picture (ASP) while mounted on a tactical vehicle
- Superior performance against low signature targets
- Multi-Mission – “one radar does it all”
- MOSA – Modular Open System Architecture, easily integrated with all kinds of Hard and Soft kill systems
- Software-defined, automated operation through advanced signal processing and algorithms
- Handles hundreds of targets through Track While Search (TWS) and Revisit modes
- Enhanced fast volume scan coverage, full Hemispheric (360°) search & track with four radars
- In-depth 4D analysis of Doppler and other target features
- SWaP-C superiority, unprecedented affordability
- Advanced antenna topology (MIMO) provides extended accuracies, multipath and clutter handling
- Unique low-probability-of-detection features

**RADA’S aCHR SUPPORTS A VARIETY OF ON-THE-MOVE AND STATIONARY OPERATIONAL MISSIONS:**

- Active Protection (APS), Vehicle Protection (VPS) and Hostile Fire Detection (HFD) operational missions; handles all types of threats on combat vehicles: RPGs, ATGMs, tank rounds and small arms
- Counter-Unmanned Aircraft System (C-UAS) & Very-Short-Range Air Defense (VSHORAD); handles all types of aerial threats including class-1 micro-drones
- Hemispheric surveillance, simultaneous detection and tracking of aerial and ground threats
KEY FEATURES

• Active Electronically Scanned Array (AESA) antenna
• Extremely high doppler resolution that provides fast, accurate threat detection and classification
• Wide range of threat velocities
• Coexistence capability
• Multipath reduction and clutter handling through advanced antenna topology
• Electronic Counter Countermeasures (ECCM) capabilities
• Cyber Certification (Risk Management Framework) Ready

OPERATIONAL MISSIONS AND NOMENCLATURE

<table>
<thead>
<tr>
<th>Mission and Capability</th>
<th>Model</th>
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<tbody>
<tr>
<td>APS/VPS, HFD</td>
<td>RPS-600</td>
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<tr>
<td>C-UAS, VSHORAD</td>
<td>RPS-620 / RPS-62</td>
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<tr>
<td>Hemispheric Surveillance</td>
<td>RPS-640 / RPS-64</td>
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</tbody>
</table>
PARAMETERS

Spatial coverage
- Single radar: 90° Az, 90° El
- Four radars installation: full hemisphere

Interfaces
- Ethernet, I/O Discrete

Interface Protocols
- ASTERIX, Customer-tailored

Input Power
- 28 VDC (per MIL-STD-1275E)

Power Consumption
- 200 W average

Dimensions
- Width: 46.4 cm, Height: 29.5 cm, Depth: 18.9 cm

Weight
- 34 kg

Operating Temperatures
- -40° C to +55° C

Cooling Method
- Passive only

MAXIMUM DETECTION RANGES

<table>
<thead>
<tr>
<th>Threat</th>
<th>Range</th>
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<tbody>
<tr>
<td>Direct-Attack Rocket / Missile</td>
<td>4 Km</td>
</tr>
<tr>
<td>Nano UAV</td>
<td>3 Km</td>
</tr>
<tr>
<td>Medium-Size UAV</td>
<td>15 Km</td>
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<tr>
<td>Fighter</td>
<td>22 Km</td>
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<tr>
<td>Utility Helicopter</td>
<td>15 Km</td>
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<tr>
<td>Pedestrians</td>
<td>7 Km</td>
</tr>
<tr>
<td>Vehicles</td>
<td>15 Km</td>
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