



RADAR SYSTEMS

aCHR® Advanced Compact Hemispheric Radar

A cutting-edge, ground-based, multi-mission radar.

The aCHR is a compact S-Band Pulse-Doppler, Active Electronically Scanned Array (AESA) radar optimized to support Vehicle Protection Systems (VPS), Active Protection Systems (APS), and Very Short-Range Air Defense (V-SHORAD) platforms. The software definition of the aCHR allows it to be configured in minutes to provide the optimal performance, accuracy, and target sample rate to support a variety of mission profiles. As the one of the smallest DRS RADA models in size, weight, and power, it is the optimal choice for vehicle-based systems with strict payload requirements.

New capabilities are introduced with the aCHR such as advanced antenna topology (MIMO) to improve accuracy, multipath mitigation, and clutter mitigation. The versatility of the aCHR allows it to meet multi-mission profiles while being

integrated on mobile platforms or stationary emplacements. Sharing the same interface as all other DRS RADA products, the aCHR can be easily placed on to existing platforms or integrated with new platforms consisting of hard and soft kill systems.

MISSIONS

- Counter Unmanned Aircraft System (C-UAS) and Short-Range Air Defense (SHORAD)
- Vehicle Protection Systems (VPS)/Active Protection Systems (APS)
- Counter Rocket, Artillery, and Mortar (CRAM) with Point-of-Origin/Point-of-Impact designation
- Perimeter Defense

KEY CHARACTERISTICS

- MIMO antenna architecture for improved detection accuracy and resolution.
- Innovative GaN Semiconductor Technology: Reduced package size and improved thermal performance.
- Automated target detection and improved multipath mitigation through advanced signal processing and algorithms.
- Handles hundreds of targets through Track While Search.
- Passive Cooling reduces integration complexity and eliminates the need for ancillary cooling systems.
- Designed for easy integration into higher level systems

KEY FEATURES

- High doppler resolution that provides fast, accurate threat detection and classification.
- Software defined with Adaptive Beam Forming to operate in multiple mission-spaces.
- Fast volume scan coverage for high target sampling rates.
- Capable of full On-The-Move operation at highway speeds
- ECCM Capabilities
- Supports disaggregated operations
- Aggressive delivery turn-around

PARAMETERS

Spatial coverage	Single radar: 90° Az, 90° El Four Panel Installation provides Full Hemispheric Coverage
Interfaces	Ethernet, I/O Discrete
Interface protocols	ASTERIX, Customer-tailored
Input Power	28 V (per MIL-STD-1275E)
Power consumption	200 W average
Dimensions	W: 46.4 cm, H: 29.5 cm, D: 18.9 cm
Weight	<24 kg
Operating temperatures	-40° to +55° C
Cooling method	Passive only

MAXIMUM DETECTION RANGES

Threat	Range
Direct-Attack Rocket / Missile	4 Km
Nano UAV	3 Km
Medium-Size UAV	15 Km
Fighter	22 Km
Utility Helicopter	15 Km
Pedestrians	7 Km
Vehicles	15 Km

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DESIGNATIONS

RPS-620	U.S Variant
RPS-640	International Variant



Front View



Rear View



Typical Installations



Other installations

