

# MHR

## Multi-Mission Hemispheric Radar



### FAMILY OF SOFTWARE DEFINED RADAR SYSTEMS

Leonardo DRS' Multi-Mission Hemispheric Radar (MHR) family provides advanced force and border protection solutions. Based on a true AESA (Active Electronically Scanned Array) antenna the MHR can be integrated with any C4I system and other radars/sensors using its standard Ethernet interfaces, and can operate stand-alone or as part of a large-scale surveillance system. It can be mobile or positioned at stationary sites.

#### THE MHR'S EXCEPTIONAL REAL-TIME CONFIGURABILITY PROVIDES A WIDE RANGE OF CAPABILITIES:

- Real-time control of scanning modes
- "Spotlight" examination of specific tracks while scanning is continued
- Operator-control or remote-control of radar operation modes
- Management of hundreds of simultaneous tracks

Variations of mission configuration and capability are provided by software defined changes only. No hardware changes are required. The 3 mission capabilities are outlined below.

#### RPS-40 HOSTILE FIRE DETECTION:

Detects, tracks, classifies and locates direct and elevated threats which are fired at stationary or mobile forces. It computes the Point-Of-Origin (POO) and Point-Of-Impact (POI) of the threats. The system utilizes three modes for trajectory detection and tracking:

- Hemisphere Search, providing hemispheric detection and tracking at a radius of up to 5 km
- Sector Search, extending trajectory tracking ranges up to 10 km
- Horizontal Search, providing search and track of direct and near-direct threats

#### RPS-42 TACTICAL AIR SURVEILLANCE:

Is the ultimate volume surveillance radar for current and future Very-Short-Range Air Defense (VSHORAD) solutions. It is optimized to detect, classify and track all types of aerial objects.

#### RPS-44 COMPREHENSIVE BORDER PROTECTION:

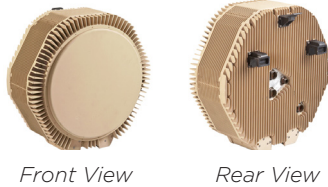
Provides Comprehensive Border Protection through the detection, classification and tracking of aerial and surface intruders.

# MULTI-MISSION HEMISPHERIC RADAR (MHR)

## HIGHLIGHTS

- Pulse Doppler, Software-Defined Radars
- AESA (Active Electronically Scanned Array) Antenna
- Extremely High Elevation Coverage
- Non-Rotating, Solid State Radars
- Digital: Beam Forming, Receivers, Pulse Compression
- Compact and Mobile, for Tactical Applications
- High Reliability
- Superior Performance-to-Price Ratio

## MHR RADAR:



## PERFORMANCE FEATURES

### MHR SPECIFICATIONS:

Parameter	Specification
Frequency Band	S Band
Antenna (AESA)	Active Electronically Scanned Array
Panel Dimensions	504 mm (diameter) by 206 mm (depth)
Weight	23 Kg per Panel, 105 Kg per System with 4 Radar Panels
Operating Temperature	-40°C to +55°C
Operating Wind Speed	35 mph (20% additional gust velocities)
Operating Voltage	28 V Nominal (16 V to 32 V, per MIL-STD-1275)
Power Consumption	320 W Average per Panel (software controlled)
Cooling	No Forced Cooling
Transmitting Power	60 W Average per Panel
Interfaces Channels	Gigabit Ethernet, Discretes, Serial

Variant:	RPS-40	RPS-42	RPS-44
Parameter	Specifications		
Detected Targets/Threats	Rockets, Artillery, Mortars (RAM), RPGs, ATGMs, Low-QE Rockets & Mortars	Fighters, Helicopters, UAVs, Transport Aircraft	Surface Targets: Pedestrians, Vehicles, Vessels Aerial Targets: Helicopters, UAVs, Light and Ultra-light Aircraft
Typical Detection Range			25 km - Aerial Vehicles 9 km - Pedestrians 20 km - Vehicles & Medium-size Vessels 40 km - Large Vessels
Elevation Coverage	0° to +70° for elevated fire 0° to +40° for direct fire	-10° to +70° in Elevation	
Azimuth Coverage	Up to 360° (90° per panel)		
Minimum Range	30 m	150 m	100 m
Maximum Range	5 km in Hemisphere Search 10 km in Sector Search	30 km	40km
Minimum Target Altitude	N/A	30 ft	
Maximum Target Altitude	30,000 ft		
Minimum Target Velocity	70 m/s	5 knots	0.5 m/s - Perimeter Surveillance 5 knots - Aerial Vehicles
Maximum Target Velocity	1,000 m/s for elevated fire 600 m/s for direct fire	800 knots	N/A
Spatial Accuracy	Less than 0.5°		
Speed Accuracy	1 m/s		0.5 m/s
Range Accuracy	10 m	50 m	1 m

## Land Systems

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