

MULTI-MISSION HEMISPHERIC RADAR



MULTI-MISSION HEMISPHERIC RADAR (MHR) FAMILY OF SOFTWARE DEFINED RADAR SYSTEMS

DRS's 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

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

PERFORMANCE FEATURES

MHR SPECIFICATIONS:	
Parameter	Specification
Frequency Band	S Band
Antenna	Active Electronically Scanned Array (AESA)
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	Gigabit Ethernet, Discretes, Serial Channels

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

MHR RADAR:



Specifications subject to change without notice. The products identified herein are controlled for export under the U.S. International Traffic in Arms Regulations (ITAR), 22 CFR 120-130, and may not be exported or transferred to any non-U.S. Person, country or entity, by any means, without prior written approval from the U.S. Department of State, Directorate of Defense Trade Controls (DDTC).

This document does not contain any technology or technical data subject to U.S. export control.

04-2017