



Comprehensive  
Intrusion Management



## Three-Dimensional Perimeter Surveillance Radars

RADA's Three-Dimensional (3D) Perimeter Surveillance Radars provide comprehensive border and perimeter surveillance through detection, classification and tracking of surface and aerial intruders such as pedestrians, vehicles, slow and small aircraft, vessels and more.

These radar systems can be based on any member of RADA's Multi-Mission Hemispheric Radar (MHR) family of tactical radar platforms – pMHR, eMHR, ieMHR, and also the Compact Hemispheric Radar (CHR) platform. These radar platforms differ primarily in antenna sizes, resulting in maximal detection ranges.

RADA's 3D Perimeter Surveillance Radar Systems are the systems of choice for borders, coasts and critical infrastructure protection solutions. These radar systems can be integrated with any C<sup>4</sup>I system and other radars/sensors using its standard Ethernet interfaces, and can operate stand-alone or as part of a large-scale surveillance system, vehicle-mounted or static.

A single radar platform provides 90° azimuth coverage using MHR and 120° using CHR. Hemispheric coverage is achieved when four/three identical and interchangeable radars are employed as a system.

In addition to 3D Perimeter Surveillance, these programmable, software-defined radar platforms can host a variety of operational missions such as Aerial Surveillance, Hostile Fire Location, and combinations of such operational missions.

Nomenclature of the radar systems (per platform):

Mission	CHR	pMHR	eMHR	ieMHR
3D Perimeter Surveillance	RHS-14	RHS-44	RHS-74	RHS-84
All-Threat Air Surveillance	RPS-12	RPS-42	RPS-72	RPS-82
Hostile Fire Location	RPS-15	RPS-40 / RPS-41	RPS-70 / RPS-71	RPS-80 / RPS-81

## Full Range of Tactical Radar Platforms for the Maneuver Force



- Pulse Doppler, Software-Defined, Multi-Mission Radar Platforms
- AESA (Active Electronically Scanned Array) Antenna based on GaN Amplifiers
- Extremely High Elevation Angles, up to Hemispheric Coverage
- On-the-Move (OTM) Operation
- Non-Rotating, Solid State, Digital Radars
- Compact and Mobile, for Tactical Applications
- High Reliability
- Superior Performance-to-Price Ratio

### Radar Platforms Specifications:

PARAMETER	CHR	pMHR	eMHR	ieMHR
Spatial Coverage (Single Radar)	120° Az, 90° EI	90° Cone from Antenna Axis (90° Az, 90° EI)		
Frequency Band	S Band			
Antenna Type	AESA			
Interfaces	Ethernet, I/O Discretes, RS-422, RS-232, USB-2.0, VGA			
Input Power	28 V (16V to 32V, per MIL-STD-1275B)			
Power Consumption (Single Radar)	110 W average	350 W average	590 W average	760 W average
Dimensions	47.5 cm (w) by 27 cm (h) by 16.5 cm (d)	50.4 cm diameter, 16.5 cm max width	67 cm diameter, 16.5 cm max width	79 cm diameter, 17 cm max width
Weight	18 Kg (with armored antenna)	20 kg	40 kg	58 kg
Cooling Method	Passive Only			
Mean Time Between Failures (GF Environment, Calc.)	Over 25,000 Hours	Over 15,500 Hours	Over 11,500 hours	Over 8,500 Hours
Operating Temperature	-40° to +55° C			

## Radar Operating Modes:

- **Track While Search:**

The radar search volume is set to meet the desired continuous coverage. Elevation coverage is mission-dependent, can reach up to 90°. Search beams are overlapped to avoid losses. The designed cycle time enables stable tracking of practically unlimited number of targets within the search volume coverage.

- **Target Revisit:**

When a tracked target exits the search volume, the Revisit mode is automatically activated and additional dwells are scheduled among the Track While Search dwells. Targets can be tracked up to the radar spatial coverage limits. Revisit rate is mission dependent, and can be ceased based on target parameters (speed, direction, classification, ...). Each radar can typically handle up to 10 revisited targets.

- **Single Target Tracking**

This mode is employed when the most accurate and frequent information on a certain target is desired, typically by an external weapon system who also commands the radar to this mode. Specifically, angular accuracies of a tracked target are more than doubled and can reach fire control accuracies.

## Maximal Detection Ranges per Radar Systems:

Type of Threat	RHS-14 (Hosted on CHR)	RHS-44 (Hosted on pMHR)	RHS-74 (Hosted on eMHR)	RHS-84 (Hosted on ieMHR)
Light Transport Aircraft	6 Km	25 Km	38 Km	50 Km
Pedestrians	4 Km	10 Km	16 Km	20 Km
Vehicles & Medium-size Vessels	8 Km	20 Km	32 Km	40 Km
Large Vessels	15 Km	40 Km	60 Km	80 Km

## Radar System Installations:



Static - Deployable, Fixed



Vehicle Mounted



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