Multi Beam Radar MBR 16-V1

Real-Time Detection and Tracking of Moving Ground and Naval Targets

Overview

The increasingly complex threats faced in today's military and para-military arenas require comprehensive solutions that provide instantaneous detection and tracking of targets in real-time. Traditional mechanical scanning radars can only detect threats in the limited areas being scanned at any given moment and have difficulty detecting small-sized and slow-velocity targets.

Elbit Systems EW and SIGINT - Elisra has developed the MBR 16-V1 Multi Beam Radar (MBR) – a staring radar that enables continuous visibility of the entire arena – delivering instantaneous detection and real-time tracking of moving targets. As soon as a target moves anywhere in the arena, it is detected and tracked and, if defined as a threat, an alert is generated.

Elbit Systems™
EW and SIGINT - Elisra

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Description

Compact and lightweight, the MBR is a portable, fully computerized solution, with no moving parts. It provides military and paramilitary combat units, HLS agencies and other ground forces with outstanding capabilities of high resolution, high accuracy, instantaneous detection and tracking and an enhanced situational awareness picture.

A key advantage of the MBR is its delivery of a range of powerful new radar technologies in an extremely small package. The easy-to-use interface and ultra-effective detection and tracking capabilities make the system ideal for forces involved in wide-area reconnaissance missions and covert operations.

The MBR is configured for field operation on a tripod, and can also be installed on fixed installations such as towers or on vehicle-mounted masts. With a radar weight of 24 kg, the radar can be carried by two soldiers and set up quickly and easily in almost any location.

Incorporating cutting-edge Frequency-Modulated Continuous-Wave (FMCW) radar technology for low probability of interception, the MBR provides high probability of detection with an extremely low false alarm rate, as well as accurate range and azimuth tracking capabilities, day or night and in all weather conditions.

Applications

- Border surveillance
- Critical infrastructure protection
- Airport perimeter surveillance
- Harbor surveillance
- Battlefield surveillance
- Artillery-aiming support

Main Features

- Ground and naval target surveillance
- Instantaneous and continuous coverage of the arena
- Low probability of interception (FMCW very low transmitted power)
- No moving parts
- Automatic target tracking and classification
- Automatic alarm zones (user-defined)
- Continuous recording of all measurements
- Selectable instrument range scales providing enhanced resolution and accuracy
- Low weight and low power consumption suitable for field man-portable operation
- All weather, day/night operation
- Remote operation
- Artillery fire deviation measurement with center of gravity determination
- Fully computerized
- Built-in GPS and compass to set radar and target positions
- Built-in optical sight for fine angular harmonization
- Targets displayed as icons on digital map
- Radar terrain mapping using clutter map
- Adjustable output power according to selected range
- Automatic and manual built-in tests (BIT)

Specifications

- Frequency Band: X-band
- Detection Ranges:
  - Pedestrians RCS = 0.5 m^2 7 km
  - Equipped Soldier RCS = 1 m^2 10 km
  - Vehicle RCS = 10 m^2 17 km
- Azimuth Coverage: Continuous 90° staring with option for 180°, 270°, or 360°
- Range Accuracy: <10m [RMS]
- Azimuth Accuracy: ≤ 0.5°
- Number of Tracks: >500
- Transmitted Power: Max 10W
- Power: 28VDC [12-33VDC]
- Power Consumption: 180W
- Temperature:
  - Operation: -32°C to +55°C
  - Storage: -40°C to +60°C
- Radar Weight: 24 kg
- MTBF: >20,000 hours
- Interface: Ethernet, RS-485

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