

WATCHGUARD

Multi-Mode Ground Surveillance Radar ELM-2180

INTRODUCTION

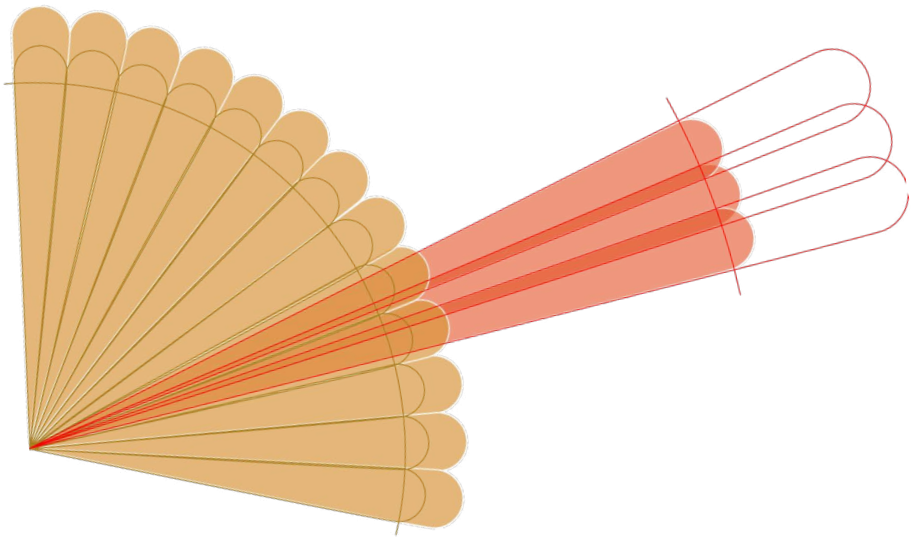
WatchGuard (ELM-2180) is a family of operationally-proven radars that provide tactical ground surveillance capabilities to security and defense forces. The WatchGuard radar constitutes the latest version of this field-proven series with up-to-date hardware in a newly designed structure. The high-performance radars can be installed at fixed sites, integrated into networked systems to protect borders, bases, airports and other critical infrastructures. Owing to their light weight, portability and quick assembly, the radars can also be configured for mobile forces, such as infantry and commando units, as a complete backpack solution including cables, power supply, and travel case.

Operating in X-Band, the pulse-Doppler radars employ Active Electronically Scanning Array (AESA) technology for optimized performance and reliability. The radar's innovative design incorporates a single solid-state module with no wiring or moving parts, and is controlled by a user-friendly Command and Control unit. With powerful signal processing capabilities, WatchGuard can perform electronic scanning or staring, providing both wide area coverage and targeting of threats at long distances with the ability to simultaneously track-while-scan over 300 targets. It can operate in all-weather conditions ensuring reliable target detection. The system includes an internal GPS used for detailed mapping. Target data (track and speed) is displayed on a map and provides critical assistance to field commanders and remote decision-makers. Optionally, the radar can be integrated with an EO camera for enhancing classification.

INTELLIGENT MODULAR SYSTEM

WatchGuard radars are modular, with the ability to connect two panels to extend the azimuth coverage to 180°. In addition, extended elevation configuration provides coverage of up to 30°. Panels can be positioned to provide 90° azimuth or perpendicular to one another providing wider coverage but utilizing the same radar module. The radars can be networked with one another offering an extended radar coverage.

The radar operates in two search modes:



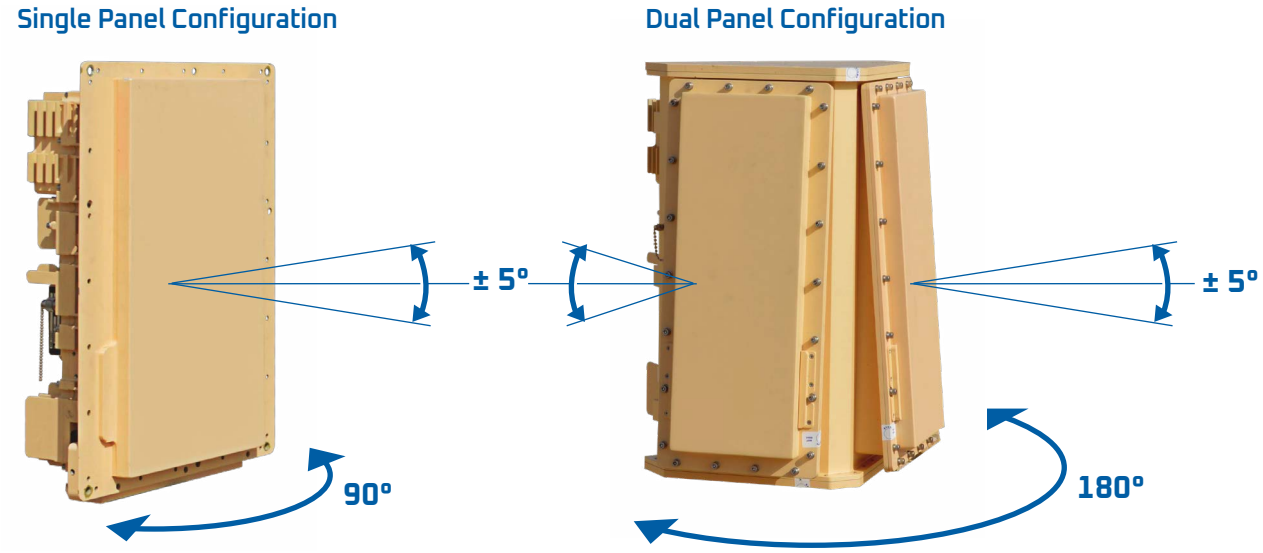
STARING MODE

Using wide transmitting and multiple receive beams, the radar illuminates a wide sector (90°) and updates threats simultaneously from the covered area. Wider beam monitors mountain range and valley or gully/wadi.

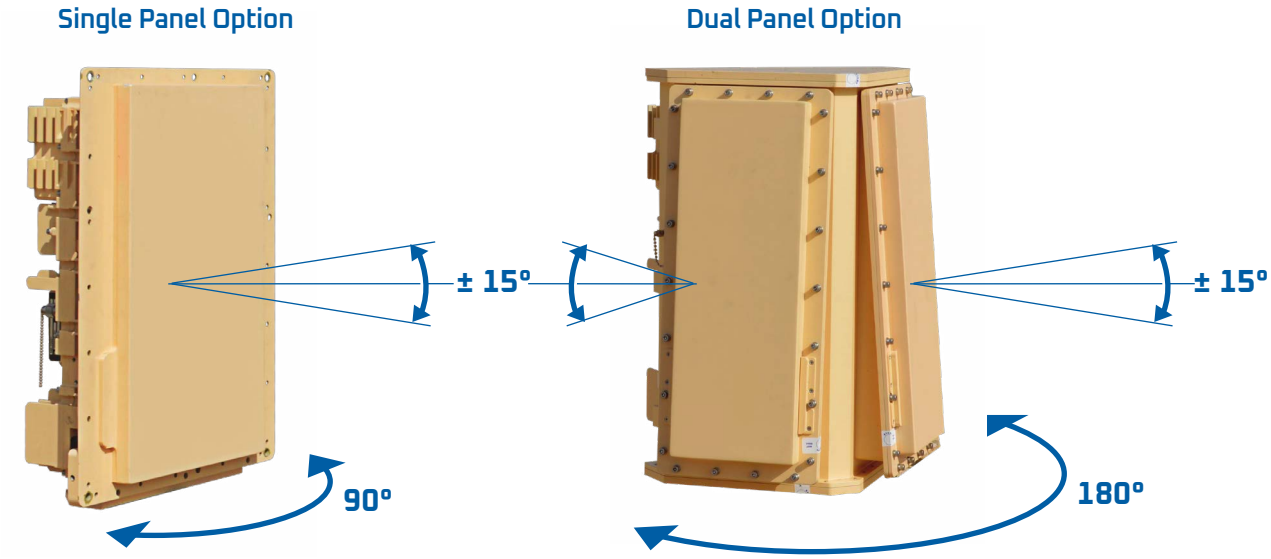
SCANNING MODE

Using a narrow beam, the radar illuminates a narrow sector (7.5°) improving the signal-to-noise ratio received from the target (low RCS detection, accuracy) and offers longer ranges.

WatchGuard 1 & 2 Panels Configurations



WatchGuard Extended Elevation (EE) 1 & 2 Panels Configurations



KEY FEATURES

- Multi-Mode Radar
- Modes: Staring or scanning beam
- Digital Beam Forming (DBF)
- SMR (Single Module Radar) - one board,no wiring
- Internal GPS for detailed mapping on a user-friendly C2 workstation
- Fully digital in receive and transmit
- Portable - includes complete backpack solution (cables, power supply, travel case)
- High reliability - solid state technology
- Mean-Time-Between-Failures (MTBF): > 20.000 hours

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Multi-Mode Ground Surveillance Radar

Standard & Extended Elevation (EE) WatchGuard Specifications

Description	90° Single Panel Configuration	180° Dual Panel Configuration
Detection range – Pedestrian / Vehicle (Revisit time = 1 sec)	8 km / 12 km	5 km / 8 km
RCS Reference – Pedestrian / Vehicle (0.5 / 5 m²)	4 km / 7 km (EE)	2.5 km / 4.5 km (EE)
MDV	0.6 km/hr	0.6 km/hr
Range Accuracy	1 m	1 m
Azimuth Accuracy	0.5°	1°
Coverage El	± 5° ± 15° (EE)	± 5° ± 15° (EE)
Coverage Az	90°	180°
Size (H x W x D)	47 cm x 34.5 cm x 19 cm	49.5 cm x 38 cm x 35 cm
Weight	13.5 kg	21 kg
Power Consumption	120 W	120 W





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