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Surface Radars Market Opportunity, Growth Drivers, Industry Trend Analysis, and Forecast 2025 - 2034

https://marketpublishers.com/r/S35FADFDD807EN.html
Date: April 2025
Pages: 190
Price: US$ 4,850.00 (Single User License)
ID: S35FADFDD807EN

Abstracts

The Global Surface Radars Market was valued at USD 17.3 billion in 2024 and is estimated to grow at a CAGR of 5.7% to reach USD 29.9 billion by 2034. This growth is primarily attributed to rapid technological advancements in radar systems and an increasing focus on modernizing defense infrastructure across the globe. The demand for more advanced, accurate, and reliable radar systems has surged, as countries invest in strengthening their surveillance capabilities and situational awareness. As defense strategies evolve toward multi-domain operations, there is a clear emphasis on integrating cutting-edge radar technologies into larger command-and-control networks.

One of the significant external factors that previously impacted the surface radars industry was the Trump administration's implementation of tariffs. These tariffs, which targeted imports including electronics and defense-related components, resulted in higher prices for essential radar parts like RF modules, signal processors, and circuit boards. The rise in component costs pushed up overall production expenses and extended procurement cycles. As a result, manufacturers were forced to revisit their sourcing strategies, turning toward local or alternative suppliers. While this shift ensured greater long-term supply chain resilience, it temporarily disrupted production timelines and impacted competitiveness.

The market is segmented based on radar type, waveform, dimension, and range. Among the radar types, the conventional radar segment accounted for the largest market share at 59.3% in 2024 and is expected to continue dominating through the forecast period. These systems remain in high demand due to their maturity and consistent performance across various applications, offering reliability and adaptability for both civilian and military uses.

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When analyzed by waveform, the frequency-modulated continuous wave (FMCW) segment reached a valuation of USD 8.1 billion in 2024. These radars are increasingly favored in missions where space, weight, and power limitations are critical. Their ability to emit low electromagnetic signatures makes them ideal for sensitive operations, while their enhanced signal clarity supports both stealth and precision. The growing requirement for compact radar solutions that don't compromise on performance is a key factor driving this segment's popularity.

In terms of radar dimensions, the 3D radar segment was valued at USD 6.7 billion in 2024. These systems are becoming a vital component of modern surveillance frameworks as they provide detailed target data, including elevation and range. The comprehensive tracking capabilities they offer are crucial in complex terrain and congested operational zones. Their compatibility with network-based defense protocols also enhances decision-making processes by offering deeper situational insights.

Based on operational range, the medium-range radar category captured the largest share at 44.6% in 2024. These radars are in high demand due to their balance between mobility, performance, and cost. Designed for quick deployment and redeployment, they are widely used in scenarios that require flexible monitoring solutions without the logistical complexities of long-range systems. Their effectiveness in monitoring fast-moving targets across broad but not excessively large areas adds to their appeal.

Regionally, the United States maintained a stronghold on the surface radars market in North America and is projected to attain a market size of USD 7.9 billion by 2034. Investment in defense modernization and homeland security continues to fuel demand. Domestic focus on integrating radar systems with digital command networks supports the growth of mobile, adaptable, and network-aware radar technologies. The drive to secure coastal, border, and infrastructure areas also amplifies the need for advanced surface radar systems tailored to dynamic and evolving threats.

On the competitive front, the market is largely dominated by a few major players, who collectively account for between 70% and 75% of the total market share. These companies are focusing on innovation, price differentiation, and strategic alliances within the defense ecosystem to enhance their offerings. By investing in new technologies and forming collaborative ventures, key players are positioning themselves to meet the shifting demands of the global security landscape.

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CHAPTER 13 COMPANY PROFILES

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