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Europe & CIS X-Band Radar Market By Type (Mobile X-Band Radar, Sea-Based X-Band Radar), By End User (Aviation Industry, Defense Industry, Others), By Country, Competition, Forecast & Opportunities, 2020-2030F

https://marketpublishers.com/r/ED45FD053AD7EN.html
Date: September 2025
Pages: 135
Price: US$ 4,000.00 (Single User License)
ID: ED45FD053AD7EN

Abstracts

Europe & CIS X-Band Radar Market was valued at USD 888.89 Million in 2024 and is expected to reach USD 1174.95 Million by 2030 with a CAGR of 4.76% during the forecast period. The X-Band radar market is experiencing notable growth driven by increasing demand for high-resolution surveillance, precision targeting, and advanced missile defense systems. Growth is fueled by rising investments in defense modernization, the integration of cutting-edge technologies such as phased-array antennas and digital signal processing, and the need for real-time situational awareness across land, air, and maritime domains. Market trends indicate a shift toward multifunctional radar systems capable of performing simultaneous tracking, imaging, and reconnaissance tasks, while innovations in compact, lightweight, and mobile radar units are expanding operational flexibility.

Market Drivers

Increasing Demand for High-Resolution Surveillance

High-resolution surveillance requirements are fueling the adoption of X-Band radar systems across defense and security operations. These radars provide exceptional target discrimination, allowing for precise identification and tracking of fast-moving objects such as aircraft, missiles, and small naval vessels. The demand is further driven by the need for advanced reconnaissance capabilities in contested or high-risk environments, where accurate data collection is critical for operational decision-making.

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X-Band radars deliver superior spatial resolution compared to lower-frequency systems, enabling operators to detect small or low-observable targets at extended ranges. Military forces and security agencies increasingly prioritize surveillance solutions capable of integrating into multi-layered defense networks, enhancing situational awareness in complex operational theaters. The growing reliance on unmanned aerial vehicles, naval vessels, and ground-based systems for intelligence, surveillance, and reconnaissance (ISR) missions further strengthens the market, as X-Band radars become a central component of modern sensor architectures. For instance, in May 2024, Poland signed a nearly $1 billion deal to acquire four U.S.-made aerostat surveillance systems, enhancing early warning and detection of aircraft, drones, missiles, and maritime threats along its eastern and northeastern borders.

Key Market Challenges

High Cost of Development and Deployment

The complexity and sophistication of X-Band radar systems result in significant development and procurement costs, creating barriers for widespread adoption. Advanced technologies such as phased-array antennas, solid-state transmitters, and digital signal processing increase both initial investment and ongoing maintenance expenses. Research and development cycles are lengthy and require extensive testing to ensure operational reliability under diverse environmental and electromagnetic conditions. Integration into existing defense architectures often necessitates additional system modifications, software upgrades, and operator training, further raising costs. Budgetary constraints and competing defense priorities can delay procurement or limit the scale of deployment, especially for high-end multifunctional radar systems. Life-cycle costs, including calibration, repairs, and software updates, also contribute to the financial burden, making cost-effective solutions a critical consideration.

Key Market Trends

Shift Toward Multifunctional Radar Systems

Radar systems are evolving toward multifunctionality, combining surveillance, tracking, imaging, and target identification within a single platform. This trend reduces the need for multiple separate systems, optimizing space, weight, and operational efficiency. Multifunctional X-Band radars leverage digital beamforming and adaptive processing to perform simultaneous tasks without compromising accuracy or speed. Modular designs enable easy upgrades and customization for different mission profiles, from maritime

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monitoring to air defense. Integration with command-and-control networks allows real-time data dissemination, supporting rapid decision-making and coordinated operations. Multifunctionality enhances operational flexibility, allowing radars to adapt to dynamic threat environments and diverse mission requirements.

Key Market Players

Thales S.A.

RTX Corporation

Brunswick Corporation

Israel Aerospace Industries Ltd

Vaisala Oyj

Furuno Electric Co., Ltd

Japan Radio Co., Ltd

Saab AB

Terma Group

EWR Radar Systems, Inc.

Report Scope:

In this report, Europe & CIS X-Band Radar Market has been segmented into the following categories, in addition to the industry trends which have also been detailed below:

Europe & CIS X-Band Radar Market, By Type:

Mobile X-Band Radar

Sea-Based X-Band Radar

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Europe & CIS X-Band Radar Market, By End User:

Aviation Industry

Defense Industry

Others

Europe & CIS X-Band Radar Market, By Country:

Germany

Russia

France

Spain

Italy

United Kingdom

Poland

Rest of Europe & CIS

Competitive Landscape

Company Profiles: Detailed analysis of the major companies presents in Europe & CIS X-Band Radar Market.

Available Customizations:

Europe & CIS X-Band Radar Market report with the given market data, TechSci Research offers customizations according to the company's specific needs. The following customization options are available for the report:

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Company Information

Detailed analysis and profiling of additional market players (up to five).

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