

Weather Radar Market - Global Industry Size, Share, Trends, Opportunity, and Forecast, Segmented By Platform (Airborne, Land-Based), By Component (Transmitter, Antenna, Receiver, Display, and Others), By Frequency (C-Band, S-Band, X-Band, and Others), By Application (Meteorology & Hydrology, Aviation Industry, Military), By Region, By Competition, 2020-2030F

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Report description:

Market Overview

The Global Weather Radar Market, valued at USD 210.00 Million in 2024, is projected to experience a CAGR of 20.93% to reach USD 656.79 Million by 2030. Weather radar systems are specialized remote sensing technologies utilizing electromagnetic waves to detect and analyze meteorological phenomena such as precipitation, wind patterns, and atmospheric turbulence. The market for these systems is primarily driven by the escalating frequency and intensity of extreme weather events globally, necessitating enhanced early warning and forecasting capabilities.

Key Market Drivers

The increasing frequency of extreme weather events stands as a critical driver for the global weather radar market. Phenomena such as intensifying storms, heatwaves, and flooding necessitate advanced early warning and monitoring systems to mitigate societal and economic disruption. According to a World Meteorological Organization report, in November 2023, extreme weather, climate and water-related events caused almost \$1.5 trillion of economic losses in the decade to 2019, highlighting the urgent need for enhanced meteorological infrastructure to protect lives and assets. Concurrently, government investments in weather infrastructure significantly propel market expansion by funding the acquisition and deployment of new radar technologies. These strategic allocations are directed towards modernizing national meteorological services and bolstering disaster preparedness capabilities.

Key Market Challenges

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The substantial initial capital investment required for procurement, installation, and ongoing maintenance of weather radar systems directly hampers market expansion. This significant financial outlay severely restricts the ability of many nations, particularly developing economies, and smaller meteorological agencies, to acquire and deploy these essential technologies. The high cost creates a considerable barrier to entry for new market participants and limits the widespread expansion of existing networks, leading to notable geographical coverage gaps.

Key Market Trends

The adoption of Phased-Array Radar systems represents a notable shift in meteorological observation capabilities. This technology allows for rapid, flexible scanning, fundamentally improving the timeliness and precision of weather data. Unlike traditional mechanical radars, phased-array systems electronically steer beams, which enables meteorologists to focus quickly on developing storm cells and other localized phenomena, reducing typical scan times from several minutes to under one minute for a full volumetric scan. This enhanced temporal resolution is crucial for tracking fast-evolving severe weather events, thereby increasing lead times for critical warnings.

Key Market Players

- Raytheon Technologies Corporation
- Lockheed Martin Corporation
- Thales Group
- Leonardo S.p.A.
- Airbus SE
- Honeywell International Inc.
- Vaisala Oyj
- Fujitsu Limited
- Mitsubishi Electric Corporation
- China Electronics Technology Group Corporation

Report Scope:

In this report, the Global Weather Radar Market has been segmented into the following categories, in addition to the industry trends which have also been detailed below:

-□Weather Radar Market, By Platform:

- o Airborne
- o Land-Based

-□Weather Radar Market, By Component:

- o Transmitter
- o Antenna
- o Receiver
- o Display
- o Others

-□Weather Radar Market, By Frequency:

- o C-Band
- o S-Band
- o X-Band
- o Others

-□Weather Radar Market, By Application:

- o Meteorology & Hydrology
- o Aviation Industry
- o Military

-□Weather Radar Market, By Region:

- o North America
- United States

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- Japan
- Australia
- South Korea
- o South America
- Brazil
- Argentina
- Colombia
- o Middle East & Africa
- South Africa
- Saudi Arabia
- UAE

Competitive Landscape

Company Profiles: Detailed analysis of the major companies presents in the Global Weather Radar Market.

Available Customizations:

Global Weather Radar Market report with the given market data, TechSci Research offers customizations according to a company's specific needs. The following customization options are available for the report:

Company Information

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

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