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Passive Radar Market Forecasts to 2032 – Global Analysis By Type (Passive Bi-Static Radar (PBR), Passive Multi-Static Radars and Passive Coherent Location (PCL)), Platform (Maritime, Air, Land and Space-based), Frequency Band, Application, End User and By Geography

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Abstracts

According to Stratistics MRC, the Global Passive Radar Market is accounted for $1.67 billion in 2025 and is expected to reach $3.58 billion by 2032 growing at a CAGR of 11.5% during the forecast period. Passive radar is a type of radar system that detects and tracks objects by processing reflections from non-cooperative sources of illumination, such as commercial broadcast signals (TV, radio), cellular signals, or other ambient electromagnetic emissions. Passive radar is more covert and less vulnerable to jamming or detection than traditional active radar because it doesn't emit its own signal. Both military and civilian applications can benefit from this technology, which lowers the possibility of interference or interception while improving situational awareness. Moreover, sophisticated signal processing methods are used by passive radar systems to separate target information from clutter and background noise.

According to the NATO Science and Technology Organization (STO), passive radar systems—especially when fused with active radar—significantly enhance detection reliability across ground, sea, and air platforms. In a 2019 trial involving seven NATO nations plus Australia, Sweden, and Switzerland, the fusion of active and passive radars was successfully demonstrated in a mobile military network

Market Dynamics:

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Driver:

Growing interest in secret monitoring

The ability of passive radar systems to conduct surveillance without actively sending out signals has led to their increasing adoption. Because enemy forces cannot readily detect or target them with anti-radiation weapons, they are perfect for covert missions. Tracking low-observable targets like drones or stealth aircraft, passive radar offers a covert and secure way to monitor airspace in military and defense scenarios, particularly in contested and hostile environments. Because passive radar can function covertly and improve the resilience of detection infrastructure, NATO has highlighted the significance of such systems in contemporary air defense architectures in its research programs.

Restraint:

Complex requirements for signal processing

Passive radar must use signals that are not intended for radar use, in contrast to active radar systems that can modify the transmitted waveform to meet particular detection objectives. This leads to significant difficulties in target discrimination, Doppler processing, clutter removal, and signal synchronization. The receiver must contend with signal multipath, delays, and interference from the original broadcaster while gleaning valuable reflections from a noisy environment. Therefore, sophisticated real-time signal processing algorithms, high-performance computing power, and expert system calibration are needed for passive radar systems. System complexity, development expenses, and maintenance burdens are increased by these technical requirements, particularly for civilian users or new entrants lacking defense-grade experience.

Opportunity:

Growth in the commercial and civilian sectors

The growing ability of passive radar to be used for non-military purposes is one of its most promising prospects. Passive radar is perfect for urban areas where electromagnetic pollution and spectrum licensing are issues because it doesn't emit any signals like traditional active radar does. By using passive radar, civilian industries like air traffic control, airport perimeter security, urban drone monitoring, and critical infrastructure protection can increase safety and awareness without interfering with

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other electronic systems. Moreover, cities will need low-cost, dependable, low-emission surveillance tools as drones, air taxis, and autonomous delivery systems proliferate; passive radar technology is well-suited to this role.

Threat:

Threat posed by sophisticated active radar systems

Despite the distinct benefits of passive radar, active radar technology is still developing quickly owing to advancements in adaptive waveform design, digital beamforming, gallium nitride (GaN) amplifiers, and AESA (Active Electronically Scanned Array) architectures. These advancements are significantly exceeding the dependability of existing passive radar systems in terms of detection range, resolution, and target tracking accuracy. These high-performance active systems are frequently preferred by governments and militaries due to their demonstrated battlefield utility, flexibility, and more direct control. In terms of deployment and investment, passive radar may be eclipsed by this technological race, particularly if passive systems are unable to compete with or integrate with contemporary radar capabilities.

Covid-19 Impact:

The COVID-19 pandemic affected the passive radar market in a variety of ways. On the one hand, defense procurement and research and development activities were momentarily slowed down by global supply chain disruptions and budget reallocations toward healthcare, which caused several passive radar development and deployment programs to be delayed. Travel limitations and lockdowns also had an impact on field testing, system integration, and the manufacturing of critical components. However, the pandemic highlighted the value of low-emission, non-intrusive surveillance technologies for unmanned airspace, border, and restricted zone monitoring, which sparked a resurgence of interest in passive radar systems for both military and commercial uses.

The passive coherent location (PCL) segment is expected to be the largest during the forecast period

The passive coherent location (PCL) segment is expected to account for the largest market share during the forecast period. The ability to detect and track targets without releasing any radar signals—making it extremely cost-effective and stealthy—by utilizing existing non-cooperative transmitters, such as FM radio, TV broadcasts, and cellular signals, drives its dominance. Because PCL systems are compatible with urban

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environments and resistant to electronic countermeasures, they are especially useful in contemporary warfare and airspace surveillance. Moreover, the use of PCL systems keeps growing, solidifying their market-leading position as countries prioritize low-emission surveillance systems to lower detection risk and operating costs.

The space-based segment is expected to have the highest CAGR during the forecast period

Over the forecast period, the space-based segment is predicted to witness the highest growth rate. Growing expenditures in space situational awareness, satellite-based surveillance, and the strategic requirement for worldwide coverage independent of terrestrial infrastructure are the main drivers of this quick expansion. Through the use of opportunity signals from Earth-based or other satellite sources, space-based passive radar systems provide improved capabilities for highly stealthy tracking of objects in orbit or in the air. For defense forces looking to stay covert while maintaining orbital domain awareness and upper-atmosphere awareness, these systems are essential. Additionally, the use and scalability of space-based passive radar solutions are further accelerated by the development of satellite constellations and smaller space technologies.

Region with largest share:

During the forecast period, the Europe region is expected to hold the largest market share, driven by significant investments in cutting-edge defense technologies, a growing emphasis on electronic warfare capabilities, and the presence of important developers of passive radar systems. Passive radar systems are being actively adopted by European countries for urban security, air defense, and border surveillance because of their affordability and stealth. Furthermore, the European Union's efforts to improve situational awareness and lessen reliance on active radar systems have also increased demand in the region. With the help of partnerships between defense ministries and private sector entities, nations like Germany, the UK, and France are among the top adopters, securing Europe's leading position in the global passive radar market.

Region with highest CAGR:

Over the forecast period, the Asia Pacific region is anticipated to exhibit the highest CAGR, driven by growing geopolitical tensions, increased defense budgets, and the need for sophisticated surveillance technologies in nations like South Korea, Japan, China, and India. Passive radar systems have become more widely used as a result of

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the region's emphasis on improving low-emission detection capabilities to protect maritime areas, airspace, and borders. The market is growing as a result of continued military modernization initiatives, rapid technological advancements, and higher investments in domestic defense manufacturing. Moreover, Asia-Pacific is becoming a hotspot for passive radar deployment and innovation as countries look for more resilient and stealthy radar solutions to combat contemporary threats.

Key players in the market

Some of the key players in Passive Radar Market include Israel Aerospace Industries Ltd., Hensoldt AG, Indra Sistemas, S.A., RTX Corporation, SRC Inc., ERA AS (Omnipol Group), Leonardo S.p.A, Airbus SE, Thales Group, L3Harris Technologies, Inc, BAE Systems plc, Lockheed Martin, Advanced Electronics Company and Ramet AS.

Key Developments:

In July 2025, HENSOLDT and Young Poong Electronics (YPE) formalised a License and Manufacturing Agreement. Under this agreement, YPE will locally produce HENSOLDT’s lightweight LCR 100 flight data recorder and the combined voice and data recorder FCR 230, also known as the combined voice and flight data recorder. These locally manufactured recorders will initially serve the expanding South Korean market, with the option to supply additional customers throughout Asia and the Pacific region.

In May 2025, Raytheon, an RTX business, has been awarded a $580 million follow-on production contract from the U.S. Navy for the Next Generation Jammer Mid-Band (NGJ-MB) system. Under the contract, Raytheon will provide additional production NGJ-MB pod shipsets, including pods for the Royal Australian Air Force, as well as spares and peculiar support equipment.

In July 2024, Israel Aerospace Industries reportedly secures a $1 billion deal with undisclosed foreign client. The substantial agreement is set to be delivered over five years and completed by 2029. Although IAI has not revealed specific details about the deal or the client, foreign media speculates that it involves the delivery of satellites to Morocco.

Types Covered:

- Passive Bi-Static Radar (PBR)

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Passive Multi-Static Radars

Passive Coherent Location (PCL)

Platforms Covered:

Maritime

Air

Land

Space-based

Frequency Bands Covered:

L-band

S-band

C-band

X-band

Applications Covered:

Air Traffic Control

Border Surveillance

Military Surveillance

Disaster Monitoring

Traffic Management

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- Maritime Surveillance
- Other Applications

End Users Covered:

- Defense
- Civil Aviation
- Other End Users

Regions Covered:

- North America
  - US
  - Canada
  - Mexico
- Europe
  - Germany
  - UK
  - Italy
  - France
  - Spain
  - Rest of Europe

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- Asia Pacific
  - Japan
  - China
  - India
  - Australia
  - New Zealand
  - South Korea
  - Rest of Asia Pacific
- South America
  - Argentina
  - Brazil
  - Chile
  - Rest of South America
- Middle East & Africa
  - Saudi Arabia
  - UAE
  - Qatar
  - South Africa
  - Rest of Middle East & Africa

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What our report offers:
- Market share assessments for the regional and country-level segments
- Strategic recommendations for the new entrants
- Covers Market data for the years 2024, 2025, 2026, 2028, and 2032
- Market Trends (Drivers, Constraints, Opportunities, Threats, Challenges, Investment Opportunities, and recommendations)
- Strategic recommendations in key business segments based on the market estimations
- Competitive landscaping mapping the key common trends
- Company profiling with detailed strategies, financials, and recent developments
- Supply chain trends mapping the latest technological advancements

Free Customization Offerings:

All the customers of this report will be entitled to receive one of the following free customization options:

Company Profiling

Comprehensive profiling of additional market players (up to 3)

SWOT Analysis of key players (up to 3)

Regional Segmentation

Market estimations, Forecasts and CAGR of any prominent country as per the client's interest (Note: Depends on feasibility check)

Competitive Benchmarking

Benchmarking of key players based on product portfolio, geographical presence, and strategic alliances

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Note: Tables for North America, Europe, APAC, South America, and Middle East & Africa Regions are also represented in the same manner as above.

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