

# **Low-Band Electronic Warfare Systems Market – Global Industry Size, Share, Trends, Opportunity, and Forecast, Segmented By Type (Electronic attack, Electronic protection, Electronic support), By Platform (Airborne, Naval, Ground, Space), By Application (Communication jamming, Radar jamming and deception, Surveillance & signal intelligence (SIGINT)), By End Use (Military, Homeland security, Commercial), By Region & Competition, 2021-2031F**

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## **Abstracts**

The Global Low-Band Electronic Warfare Systems Market is projected to grow from USD 3.13 Billion in 2025 to USD 4.35 Billion by 2031, exhibiting a Compound Annual Growth Rate (CAGR) of 5.64%. These systems operate in lower frequency ranges, such as HF and VHF, to jam communications and neutralize threats including remote-controlled improvised explosive devices (RCIEDs) and unmanned aerial systems. This market expansion is primarily driven by the urgent need to counter asymmetric threats, particularly commercial loitering munitions that depend on these frequencies for navigation and control. Furthermore, the imperative for force protection, safeguarding ground units against radio-triggered explosives, establishes a foundational demand separate from broader technological modernization. However, market growth is significantly challenged by spectrum congestion, as expanding civilian wireless networks increasingly interfere with military operations, complicating signal isolation and risking unintended disruption. This density necessitates exceptional precision to prevent friendly fire within the electromagnetic spectrum. The sector's substantial scale is highlighted by the Association of Old Crows, which reported the global electronic warfare and signals intelligence market value at over \$20 billion in annual sales in 2024,

indicating a robust investment environment supporting low-band solutions.

**Market Driver** Escalation in global defense budgets and military spending acts as a primary catalyst for the procurement of low-band electronic warfare systems. As nations prioritize the modernization of electromagnetic spectrum operations to address rising geopolitical tensions, significant capital is being allocated toward jamming and sensing technologies capable of disrupting adversary communications and navigation in the HF and VHF ranges. This fiscal expansion facilitates the transition from legacy analog systems to software-defined architectures, ensuring forces can operate effectively in contested environments. According to the Stockholm International Peace Research Institute (SIPRI), April 2025, in the 'Trends in World Military Expenditure, 2024' Fact Sheet, global military expenditure reached \$2718 billion in 2024, reflecting the intensified commitment to strengthening defense postures that underpins the current demand for advanced spectrum dominance capabilities. Proliferation of unmanned aerial systems (UAS) and asymmetric threats necessitates the rapid deployment of specialized low-band countermeasures. Adversaries increasingly utilize commercial-off-the-shelf drones and loitering munitions operating on lower frequency bands to evade detection by traditional high-frequency radars, compelling defense forces to invest in dedicated electronic attack solutions. This operational requirement drives the development of systems designed specifically to degrade enemy kill chains and protect ground units from radio-controlled improvised explosive devices. Highlighting the industrial response to this demand, according to BAE Systems, February 2025, in the 'Preliminary Results Announcement 2024', the company's Electronic Systems segment recorded sales of \$7.2 billion, driven by the acute need for superior situational awareness and survivability solutions. To support these long-term modernization efforts, according to BAE Systems, in 2025, the company reported a record order backlog of \$77.8 billion, indicating sustained market activity. **Market Challenge** Spectrum congestion constitutes a formidable barrier to the growth of the Global Low-Band Electronic Warfare Systems Market. As civilian telecommunications infrastructure expands, the electromagnetic spectrum becomes increasingly saturated, severely complicating military operations that rely on precise signal isolation. This density forces low-band electronic warfare systems to operate in environments where distinguishing between hostile transmissions and neutral commercial signals is technically arduous. The risk of collateral disruption to non-combatant communications or friendly forces creates operational liabilities, making potential buyers hesitant to deploy systems that lack extreme selectivity in urbanized conflict zones. This challenge is intensifying due to the rapid global proliferation of next-generation wireless networks, which reduces the available maneuver space within the spectrum. According to the International Telecommunication Union (ITU), in 2025, 5G networks were estimated to cover 55 percent of the world's population. This widespread commercial coverage creates a high

noise floor in frequency bands often utilized by low-band jamming equipment. Consequently, manufacturers face elevated development costs to engineer higher-precision discrimination capabilities, while defense agencies face deployment limitations, thereby constraining the addressable market for standard low-band solutions. **Market Trends** The Resurgence of Low-Band Radar for Stealth Detection alters procurement priorities as nations seek to counter low-observable airframes optimized against high-frequency bands. Low-band systems in VHF and UHF ranges exploit physical resonance effects of stealth structures to detect targets that remain invisible to fire-control radars. This physics-based advantage accelerates the deployment of passive radar architectures utilizing ambient low-frequency signals for covert surveillance, allowing defenders to track threats without emitting detectable energy. Reflecting the momentum for such resilient sensing technologies, according to Hensoldt, February 2025, in the 'Financial year 2024' report, the company's order intake increased to EUR 2,904 million, underscoring the expanding demand for advanced sensor solutions in contested environments. Integration of Cognitive AI for Adaptive Threat Response is essential to manage the increasing agility of the modern electromagnetic spectrum. Legacy systems relying on pre-programmed threat libraries are often ineffective against software-defined emitters that rapidly change waveforms to evade jamming. Cognitive electronic warfare algorithms now employ machine learning to characterize unknown signals in real-time and synthesize countermeasures dynamically, ensuring effective operation despite high noise floors. This operational necessity is driving substantial contract activity for digitized, intelligent electronic warfare suites. Highlighting the sector's growth, according to Leonardo, February 2025, in the 'Board of Directors reviewed 2024 preliminary results' announcement, new orders reached €20.9 billion, driven significantly by the robust performance of the Electronics for Defense and Security segment.

## Market Driver

Increased global defense budgets and military spending serve as a primary catalyst for the procurement of low-band electronic warfare systems. Nations are prioritizing the modernization of electromagnetic spectrum operations to address rising geopolitical tensions, leading to significant capital allocation toward jamming and sensing technologies effective in the HF and VHF ranges. This financial expansion supports the transition from older analog systems to software-defined architectures, enabling forces to operate efficiently in contested environments. The Stockholm International Peace Research Institute (SIPRI) reported in April 2025 that global military expenditure reached \$2718 billion in 2024, as detailed in their 'Trends in World Military Expenditure, 2024' Fact Sheet, underscoring the intensified commitment to strengthening defense

postures that fuels demand for advanced spectrum dominance capabilities. The proliferation of unmanned aerial systems (UAS) and various asymmetric threats necessitates the rapid deployment of specialized low-band countermeasures. Adversaries increasingly employ commercial-off-the-shelf drones and loitering munitions operating on lower frequency bands to evade detection by traditional high-frequency radars, compelling defense forces to invest in dedicated electronic attack solutions. This operational requirement drives the development of systems specifically designed to disrupt enemy kill chains and protect ground units from radio-controlled improvised explosive devices. BAE Systems' 'Preliminary Results Announcement 2024', released in February 2025, highlighted that its Electronic Systems segment recorded \$7.2 billion in sales, propelled by the critical need for superior situational awareness and survivability solutions. Further indicating sustained market activity, BAE Systems reported a record order backlog of \$77.8 billion in 2025 to support these long-term modernization efforts.

## **Market Challenge**

Spectrum congestion represents a significant impediment to the growth of the Global Low-Band Electronic Warfare Systems Market. As civilian telecommunications infrastructure expands, the electromagnetic spectrum becomes increasingly saturated, severely complicating military operations that depend on precise signal isolation. This density forces low-band electronic warfare systems to function in environments where distinguishing between hostile transmissions and neutral commercial signals is technically arduous. The risk of inadvertently disrupting non-combatant communications or friendly forces creates operational liabilities, making potential buyers hesitant to deploy systems lacking extreme selectivity, particularly in urbanized conflict zones. This challenge is further exacerbated by the rapid global proliferation of next-generation wireless networks, which diminishes the available maneuver space within the spectrum. According to the International Telecommunication Union (ITU), 5G networks were estimated to cover 55 percent of the world's population in 2025. This widespread commercial coverage generates a high noise floor in frequency bands frequently used by low-band jamming equipment. Consequently, manufacturers face increased development costs to engineer higher-precision discrimination capabilities, while defense agencies encounter deployment limitations, thereby constricting the addressable market for standard low-band solutions.

## **Market Trends**

The resurgence of low-band radar for stealth detection is shifting procurement priorities, as nations seek to counter low-observable airframes specifically optimized against high-

frequency bands. Low-band systems operating in VHF and UHF ranges exploit the physical resonance effects of stealth structures, enabling them to detect targets that remain invisible to conventional fire-control radars. This physics-based advantage accelerates the deployment of passive radar architectures that utilize ambient low-frequency signals for covert surveillance, allowing defenders to track threats without emitting detectable energy. Reflecting the momentum for such resilient sensing technologies, Hensoldt's 'Financial year 2024' report from February 2025 indicated an increase in the company's order intake to EUR 2,904 million, underscoring the expanding demand for advanced sensor solutions in contested environments. The integration of Cognitive AI for adaptive threat response is becoming essential for managing the increasing agility of the modern electromagnetic spectrum. Legacy systems, which rely on pre-programmed threat libraries, are often ineffective against software-defined emitters that can rapidly change waveforms to evade jamming. Cognitive electronic warfare algorithms now leverage machine learning to characterize unknown signals in real-time and dynamically synthesize countermeasures, ensuring effective operation even amid high noise floors. This operational necessity is driving substantial contract activity for digitized, intelligent electronic warfare suites. Highlighting the sector's growth, Leonardo's 'Board of Directors reviewed 2024 preliminary results' announcement in February 2025 reported new orders reaching €20.9 billion, a figure significantly driven by the robust performance of its Electronics for Defense and Security segment.

## **Key Market Players**

BAE Systems plc

Elbit Systems Ltd.

Israel Aerospace Industries (IAI)

L3Harris Technologies, Inc.

Leonardo S.p.A.

Lockheed Martin Corporation

Northrop Grumman Corporation

Raytheon Technologies Corporation

Saab AB

Thales Group

## Report Scope

In this report, the Global Low-Band Electronic Warfare Systems Market has been segmented into the following categories, in addition to the industry trends which have also been detailed below:

### Low-Band Electronic Warfare Systems Market, By Type

Electronic attack

Electronic protection

Electronic support

### Low-Band Electronic Warfare Systems Market, By Platform

Airborne

Naval

Ground

Space

### Low-Band Electronic Warfare Systems Market, By Application

Communication jamming

Radar jamming and deception

Surveillance & signal intelligence (SIGINT)

### Low-Band Electronic Warfare Systems Market, By End Use

Military

Homeland security

Commercial

## Low-Band Electronic Warfare Systems Market, By Region

North America

United States

Canada

Mexico

Europe

France

United Kingdom

Italy

Germany

Spain

Asia Pacific

China

India

Japan

Australia

South Korea

South America

Brazil

Argentina

Colombia

Middle East & Africa

South Africa

Saudi Arabia

UAE

## **Competitive Landscape**

Company Profiles: Detailed analysis of the major companies present in the Global Low-Band Electronic Warfare Systems Market.

## **Available Customizations:**

Global Low-Band Electronic Warfare Systems 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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