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The Global Market for Reconfigurable Intelligent Surfaces (RIS) 2025-2035

https://marketpublishers.com/r/GB6988CAD28FEN.html
Date: November 2024
Pages: 176
Price: US$ 1,300.00 (Single User License)
ID: GB6988CAD28FEN

Abstracts

Reconfigurable Intelligent Surfaces (RIS), also known as Intelligent Reflecting Surfaces (IRS) or software-controlled metasurfaces, are artificial structures composed of a large number of small, passive elements that can be electronically controlled to manipulate electromagnetic waves. These surfaces can reflect, refract, absorb, or focus incoming signals in desired directions, effectively shaping the wireless propagation environment. Due to recent advances in metamaterials, Reconfigurable Intelligent Surface (RIS) has emerged as a promising technology for future 6G wireless communications. Benefiting from its high array gain, low cost, and low power consumption, RISs are expected to greatly enlarge signal coverage, improve system capacity, and increase energy efficiency.

RIS technology offers revolutionary capabilities in manipulating electromagnetic waves, enabling enhanced coverage, capacity, and energy efficiency in wireless networks. As 5G networks expand and 6G development accelerates, RIS is expected to play a crucial role in overcoming current limitations in wireless communications. Key applications span telecommunications, smart cities, Industrial IoT, healthcare, automotive, aerospace, and consumer electronics. The market is driven by increasing demand for high-speed, low-latency communications, growth in IoT adoption, and the need for energy-efficient wireless solutions. However, challenges include high initial costs, technical complexities in large-scale deployment, and standardization issues.

Report contents include:

Market Size and Growth Projections: Detailed forecasts of the RIS market size and growth rate from 2025 to 2035, segmented by technology type, application, and geography.

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Technology Deep Dive: Comprehensive analysis of various RIS technologies, including metasurfaces, liquid crystal-based RIS, MEMS-based RIS, and emerging approaches.

Analysis of Transparent and Non-Transparent Reflectors.

Application Landscape: Exploration of key application areas such as 5G/6G networks, IoT, smart cities, autonomous vehicles, and aerospace communications.

Competitive Landscape: Profiles of leading companies and emerging players in the RIS space, including their technologies, strategies, and market positioning. Companies profiled include Alcan Systems, Alphacore Inc., Edgehog Advanced Technologies, Evolv Technologies Inc., Fractal Antenna Systems Inc., Greenerwave, Huawei, Kymeta Corporation, Leadoptik Inc., Lumotive, META, Metaboards Limited, Metawave Corporation, Nokia, NTT DOCOMO, Pivotal Commware Inc., SK Telecom, Teraview Limited, and ZTE Corporation.

Future Outlook: Assessment of emerging trends, potential disruptions, and long-term prospects for RIS technology.

Developments in RIS technology, including:

Integration with AI and machine learning for adaptive control

Quantum RIS concepts pushing the boundaries of performance

Self-configuring and self-healing RIS for enhanced reliability

Holographic radio and terahertz communications enabled by RIS

Market Drivers and Opportunities

Challenges and Market Dynamics

Technology Benchmarking and Performance Analysis

Comprehensive comparison of different RIS technologies.

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Integration with Wireless Communication Systems.

Environmental and Sustainability Considerations.

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