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Molded Interconnect Device Market - Global Industry Size, Share, Trends, Opportunity, and Forecast, Segmented By Process (Laser Direct Structuring, Two-Shot Molding), By Application (Automotive, Consumer Products, Healthcare, Industrial, Military & Aerospace, Telecommunication, Others), By Region & Competition, 2021-2031F

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Abstracts

The Global Molded Interconnect Device Market is projected to expand from USD 9.94 Billion in 2025 to USD 21.62 Billion by 2031, registering a CAGR of 13.83%. Molded Interconnect Devices (MIDs) utilize injection-molded thermoplastics to embed electronic circuit traces, seamlessly merging mechanical and electrical functionalities into a single unit. This market is primarily fueled by the growing necessity for miniaturization within the electronics sector and the drive to minimize assembly stages, which concurrently reduces production costs and bolsters reliability. Industries such as automotive and medical technology are increasingly adopting these devices to achieve space optimization and functional integration. As evidence of the robust ecosystem supporting this field, the Research Association 3-D MID e.V. reported in 2024 that its specialized industrial network included 87 members, comprising various manufacturers and research institutes committed to furthering MID technology.

However, a major obstacle hindering broader market growth is the substantial upfront capital required for specialized injection molding tools and laser structuring machinery. This significant financial threshold often renders the technology economically impractical for low-volume production compared to conventional printed circuit board assemblies. Consequently, the adoption of MIDs is generally constrained to high-volume manufacturing environments where economies of scale can be effectively

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leveraged to offset the initial investment costs.

Market Driver

The surging growth of automotive electronics and electric vehicle architectures acts as a primary catalyst for the molded interconnect device market. Manufacturers are increasingly adopting this technology to embed circuits directly into structural parts, significantly lowering vehicle weight and removing the need for cumbersome cabling in tight interiors. This integration is vital for housing the intricate sensor arrays and control systems essential to modern electric mobility without sacrificing spatial efficiency. According to the International Energy Agency's 'Global EV Outlook 2024' released in April 2024, electric car sales hit nearly 14 million in 2023, generating immense demand for these integrated assemblies. The industrial magnitude of this sector is further highlighted by LPKF Laser & Electronics SE, which reported a consolidated revenue of EUR 124.3 million for the 2024 fiscal year, reflecting the heavy capital investment in the necessary laser structuring systems.

Furthermore, the rapid rollout of 5G telecommunications infrastructure stimulates market growth by demanding antenna designs that standard printed circuit boards cannot support. Molded interconnects facilitate the creation of three-dimensional antenna structures directly on the internal shells of smartphones and base stations, enhancing signal quality across various frequencies without enlarging the device. This capability is crucial for handling the multiple-input multiple-output configurations required by next-generation networks while preserving the compact designs consumers expect. As noted in the 'Ericsson Mobility Report' from June 2024, global 5G subscriptions surged by 160 million in the first quarter of 2024 alone, totaling 1.7 billion, which places increasing pressure on component makers to supply these advanced connectivity solutions.

Market Challenge

A major impediment to the growth of the Molded Interconnect Device market is the substantial upfront investment needed for specialized manufacturing infrastructure. Companies are required to allocate significant capital for precision injection molding machinery and laser direct structuring tools before production can even begin. This heavy financial burden creates a high break-even point, making the technology economically inefficient for low-to-medium volume production runs. As a result, adoption is largely confined to mass-market industries such as automotive and medical electronics, thereby excluding smaller businesses and lower-volume applications that

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cannot justify the initial costs through economies of scale.

The capital-intensive nature of this technology is further demonstrated by the immense financial resources necessary for its development. According to the Research Association 3-D MID e.V., the cumulative funding for research projects managed by the association reached approximately 176 million euros in 2024. This level of investment highlights the high entry barriers and financial complexity associated with the sector, directly restricting the market's capacity to penetrate cost-sensitive areas where traditional printed circuit boards continue to be the more financially viable alternative.

Market Trends

The rise of bio-compatible interconnects is transforming the market for smart medical implants, propelled by the urgent requirement for miniaturization in patient-care devices. Manufacturers are increasingly utilizing molded interconnect devices to embed intricate circuitry directly into the casings of hearing aids, neuromodulation systems, and smart drug delivery units while maintaining biocompatibility. This strategy maximizes internal space and boosts device reliability by minimizing the number of distinct components needed within tightly constrained form factors. Underscoring the strong industrial momentum in this healthcare segment, Cicor Group reported in its 'Half Year Report 2025' from July 2025 that it achieved net sales of CHF 280.7 million, fueled by persistent demand in its core medical technology and industrial sectors.

Simultaneously, the advent of Additively Manufactured Electronics (AME) is revolutionizing rapid prototyping by eliminating the steep initial costs tied to conventional injection molding tooling. This manufacturing breakthrough permits engineers to print dielectric structures and conductive traces concurrently, allowing for the creation of complex 3D circuits in a matter of hours instead of weeks. By removing the financial hurdle of costly tooling for low-volume production, AME speeds up design iteration cycles and supports the agile development of tailored electronic components. Highlighting the swift commercial expansion of this digital production technology, Nano Dimension announced in September 2025 that its second-quarter revenue climbed to USD 25.8 million, marking a 72.4% increase compared to the same period the prior year.

Key Market Players

Molex LLC

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TE Connectivity Ltd.

Amphenol Corporation

HARTING Technology Group

KYOCERA AVX Components Corporation

LPKF Laser & Electronics AG

MID Solutions GmbH

TEPROSA

Taoglas

RTP Company

Report Scope

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

Molded Interconnect Device Market, By Process

Laser Direct Structuring

Two-Shot Molding

Molded Interconnect Device Market, By Application

Automotive

Consumer Products

Healthcare

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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 Molded Interconnect Device Market.

Available Customizations:

Global Molded Interconnect Device 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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