

Demand for Vehicle-Integrated Inverter Market is forecasted to reach a value of US \$8.68 billion by 2029

The Business Research Company's Vehicle-Integrated Inverter Global Market Report 2025 - Market Size, Trends, And Global Forecast 2025-2034

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How Large Will The Vehicle-Integrated Inverter Market Be By 2025? Recent years have seen a remarkable escalation in the size of the vehicle-integrated inverter



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market. Projected to rise from \$4.14 billion in 2024 to \$4.82 billion in 2025, the market's compound annual growth rate (CAGR) stands at 16.3%. This significant growth during the previous period is owed to the escalating demand for hybrid and plug-in hybrid vehicles, a heightened emphasis on energy efficiency in automobile systems, an increase in the demand for automotive traction inverters, a surge in the need for automotive on-board power inverters, and a growing demand for car power inverters.

The market for integrated inverters in vehicles is

anticipated to witness a swift expansion in the coming years. Projected to amplify to \$8.69 billion by 2029, the market will experience a Compound Annual Growth Rate (CAGR) of 15.9%. This prospective growth over the forecast period can be attributed to factors such as increased requirement for energy-efficient power electronics, escalated support from government entities for eco-friendly mobility, substantial automotive manufacturer investments in electrification, a growing necessity for enhanced driving range and battery optimization, and a surge in the use of renewable energy for vehicle charging. Dominant trends during the prediction period include

progress in unit integration of inverter drives, innovation in Vehicle-to-Grid (V2G) bi-directional processing units, inventive modular inverter designs, incorporation of regenerative braking with inverter systems, and advancements in inverter software facilitating real-time diagnostics.

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What Are The Major Driving Forces Influencing The Vehicle-Integrated Inverter Market Landscape?

The anticipated advancement of connected and autonomous vehicles is predicted to propel the expansion of the vehicle-integrated inverter market. Using advanced technologies, these connected and autonomous vehicles (CAVs) can self-navigate and interact with surroundings, thereby enhancing road safety and efficiency. The emergence and growth of these vehicles is primarily attributed to the need for refined traffic efficiency, since they can streamline vehicle movement and decrease road congestion. Integrated inverters for vehicles play a vital role in ensuring the efficient power management between the battery and drivetrain of these vehicles, and simultaneously support onboard electronics, sensors, and communication systems for uninterrupted automation and connectivity. For example, the National Association of Insurance Commissioners, a nonprofit organization based in the US, projected in December 2022 that the US roads would see about 4.5 million autonomous vehicles by 2030. Thus, the increasing emergence of connected and autonomous vehicles is spearheading the expansion of the vehicle-integrated inverter market.

Who Are The Top Players In The Vehicle-Integrated Inverter Market? Major players in the Vehicle-Integrated Inverter Global Market Report 2025 include:

- Toyota Motor Corporation
- Tesla Inc.
- Robert Bosch GmbH
- BYD Company Limited
- Siemens AG
- LG Electronics Inc.
- Denso Corporation
- ZF Friedrichshafen AG
- Hyundai Mobis Co. Ltd.
- Magna International Inc.

What Are The Key Trends Shaping The Vehicle-Integrated Inverter Industry? Leading corporations in the vehicle-integrated inverter industry are putting efforts in creating upgraded products like the next-gen silicon carbide (SiC) power modules, aimed at increasing energy efficiency and augmenting the travel distance of electric cars. These upgraded silicon carbide (SiC) power modules are sophisticated semiconductor systems that efficiently handle elevated voltages, frequencies, and temperatures, facilitating compact designs, less energy wastage, and improved performance in electric cars and industrial practices. For instance, in

March 2023, the Japan-based mobility firm, DENSO Corporation, launched its pioneering inverter that uses SiC semiconductors, which considerably decrease power loss and escalate energy efficiency in electric vehicles. This inverter, integrated into the eAxle electric driving module, is utilized in the newly launched Lexus RZ, which is Lexus's maiden dedicated battery electric vehicle. SiC power semiconductors curtail power loss to less than half in comparison to conventional silicon semiconductors, thus prolonging the driving range of electric vehicles. DENSO's exclusive trench-type metal-oxide-semiconductor (MOS) configuration heightens output by lowering the power loss generated by heat.

Market Share And Forecast By Segment In The Global Vehicle-Integrated Inverter Market The vehicle-integrated inverter market covered in this report is segmented as

- 1) By Power Output: Up To 50 Kilowatt (Kw), 51–100 Kilowatt (Kw), Above 100 Kilowatt (Kw)
- 2) By Propulsion Type: Battery Electric Vehicles, Plug-In Hybrid Electric Vehicles, Hybrid Electric Vehicles, Fuel Cell Electric Vehicles
- 3) By Vehicle Type: Passenger Cars, Commercial Vehicles, Off-Highway Vehicles
- 4) By Application: Original Equipment Manufacturer (OEM), Aftermarket

Subsegments:

market-report

- 1) By Up To 50 Kilowatt (Kw): Passenger Electric Vehicles, Light Commercial Electric Vehicles, Micro Electric Vehicles, Low-Speed Electric Vehicles
- 2) By 51–100 Kilowatt (Kw): Mid-Size Passenger Electric Vehicles, Commercial Electric Vans, Plug-In Hybrid Electric Vehicles (PHEV), Battery Electric Vehicles (BEV)
- 3) By Above 100 Kilowatt (Kw): Heavy-Duty Electric Trucks, Electric Buses, High-Performance Battery Electric Vehicles (BEV), Fuel Cell Electric Vehicles (FCEV)

View the full vehicle-integrated inverter market report: https://www.thebusinessresearchcompany.com/report/vehicle-integrated-inverter-global-

Vehicle-Integrated Inverter Market Regional Insights

In 2024, North America held the leading position in the global market for vehicle-integrated inverters. It's predicted that the Asia-Pacific region will experience the most rapid growth in the future. The report on the vehicle-integrated inverter market includes regions such as Asia-Pacific, Western Europe, Eastern Europe, North America, South America, the Middle East, and Africa.

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