

Vehicle PGU Display Module Market Report: Trends, Forecast and Competitive Analysis to 2031

<https://marketpublishers.com/r/V106079D4C97EN.html>

Date: November 2024

Pages: 150

Price: US\$ 4,850.00 (Single User License)

ID: V106079D4C97EN

Abstracts

2 – 3 business days after placing order

Vehicle PGU Display Module Trends and Forecast

The future of the global vehicle PGU display module market looks promising with opportunities in the AR-HUD, car interior projector, and car exterior projector markets. The global vehicle PGU display module market is expected to grow with a CAGR of 28.0% from 2025 to 2031. The major drivers for this market are the increasing demand for advanced driver assistance systems, technological advancements in display technologies, and the integration of infotainment systems and connectivity features in vehicles.

Lucintel forecasts that, within the type category, TFT-LCD PGU is expected to witness the highest growth over the forecast period.

Within the application category, AR-HUD is expected to witness the highest growth.

In terms of regions, APAC is expected to witness the highest growth over the forecast period.

Gain valuable insights for your business decisions with our comprehensive 150+ page report.

Emerging Trends in the Vehicle PGU Display Module Market

Emerging trends in the vehicle PGU display module market include:

- **Integration with Electric Vehicles (EVs):** As EV adoption grows, PGU displays are becoming crucial for monitoring battery performance, energy consumption, and regeneration, providing real-time feedback for energy efficiency.
- **Augmented Reality (AR) Displays:** Manufacturers are incorporating AR into PGU displays to provide a more immersive and interactive experience, allowing drivers to visualize power flow, efficiency, and other vehicle metrics directly on the screen.
- **Advanced Customization:** More vehicles are offering customizable PGU display interfaces, allowing drivers to personalize the layout, color schemes, and information shown, enhancing user experience and control.
- **OLED and AMOLED Screens:** With advancements in display technology, OLED and AMOLED screens are being integrated into PGU modules, offering higher resolution, better contrast, and greater flexibility in design, providing clearer and more dynamic energy status displays.
- **Touchless Control and Voice Assistance:** To enhance safety and usability, vehicle PGU modules are incorporating touchless controls and voice recognition technology, allowing drivers to interact with the display without needing to physically touch the screen.
- **Increased Connectivity:** The trend toward connected vehicles means that PGU modules are integrating with cloud-based systems and external devices, allowing for remote diagnostics, energy management, and over-the-air updates to the display system.
- **Driver-Centric Data Analytics:** PGU modules are increasingly leveraging AI and machine learning to analyze driver behavior and optimize energy consumption patterns, providing personalized insights into driving habits and vehicle performance.

Recent Developments in the Vehicle PGU Display Module Market

The vehicle PGU (Power Generation Unit) display module market is evolving rapidly in response to the growing demand for more advanced and efficient automotive technologies. As vehicles, particularly electric vehicles (EVs) and hybrids, continue to

gain market share, the role of PGU display modules has become increasingly important. These modules offer real-time monitoring and visualization of a vehicle's energy management systems, helping drivers optimize performance and energy efficiency. With advancements in display technologies and vehicle electrification, the market for PGU display modules is witnessing significant innovation. Key drivers of this growth include the increasing adoption of electric vehicles, the need for more user-friendly interfaces, and the integration of smart technologies such as augmented reality and connectivity features.

Recent Developments:

- **Technological Advancements in Displays:** Recent innovations in display technology, such as OLED and AMOLED screens, have significantly enhanced the clarity, contrast, and overall visual experience of PGU modules. These displays are now capable of presenting more complex data, including energy consumption trends, battery health, and power generation metrics, in a highly intuitive format.
- **Growth in Electric Vehicle Adoption:** The rise in electric vehicle adoption globally is a major driver for the PGU display module market. As EVs require advanced power management systems, PGU displays are essential for monitoring battery levels, energy regeneration, and consumption patterns, allowing for better performance optimization.
- **Smart Connectivity and Integration:** PGU display modules are increasingly being integrated with IoT (Internet of Things) and cloud-based technologies, allowing for real-time data exchange between the vehicle and external platforms. This connectivity enables remote diagnostics, over-the-air updates, and even personalized energy-saving suggestions based on driving behavior.
- **Augmented Reality (AR) Integration:** The incorporation of AR into PGU displays is emerging as a key trend. With AR, drivers can visualize power generation and consumption metrics in a more dynamic and interactive way, improving their ability to optimize vehicle energy usage while driving.
- **Customization and User-Centric Features:** Manufacturers are focusing on providing more customizable PGU displays, allowing drivers to tailor the interface according to their preferences. From color schemes to the display of specific vehicle performance data, these innovations are enhancing the overall user experience and making energy management easier and more intuitive.

The vehicle PGU display module market is undergoing a transformation driven by advancements in display technology, the growth of electric and hybrid vehicles, and the integration of smart technologies. With the increasing focus on energy efficiency and vehicle performance, PGU displays are becoming a critical component of modern automotive designs. The ongoing trends in augmented reality, connectivity, and customization signal that the market will continue to evolve, offering consumers smarter, more interactive, and efficient solutions for managing their vehicle's power generation systems. As automotive manufacturers continue to innovate and prioritize user experience, PGU display modules are expected to play an even more significant role in shaping the future of transportation.

Strategic Growth Opportunities for Vehicle PGU Display Module Market

The vehicle PGU (Power Generation Unit) display module market is witnessing significant growth driven by the increasing demand for advanced in-vehicle technologies, particularly within electric and hybrid vehicles. PGU display modules play a crucial role in energy management by offering real-time data on power generation, battery health, energy consumption, and efficiency. As the automotive industry focuses on sustainability, smart features, and enhanced user experiences, there are numerous strategic growth opportunities within this sector. Key opportunities arise from technological advancements, increased electric vehicle adoption, and the integration of advanced user interfaces, connectivity, and data analytics. With the rise of next-generation automotive technologies, the PGU display module market is poised for robust expansion and innovation.

Strategic Growth Opportunities:

- **Expansion of Electric and Hybrid Vehicle Markets:** As the global automotive industry shifts toward electrification, there is a growing need for efficient power management systems. PGU display modules are central to this transition, offering significant opportunities for growth by catering to electric vehicle (EV) and hybrid car manufacturers looking to optimize battery performance, charging systems, and energy regeneration.
- **Integration with Advanced Driver Assistance Systems (ADAS):** PGU display modules can be integrated with ADAS to provide enhanced vehicle performance data alongside safety features. This integration offers opportunities to improve user experience and increase the appeal of PGU systems as part of the broader trend toward autonomous driving and smart vehicle technologies.

- **Enhanced Connectivity and IoT Integration:** The adoption of connected vehicle technologies presents a substantial growth opportunity for PGU display modules. By integrating IoT (Internet of Things) connectivity, manufacturers can offer real-time data exchange, predictive maintenance, and over-the-air updates. This could further enhance the functionality of PGU displays, allowing users to monitor energy usage and power generation remotely.
- **Augmented Reality (AR) and Customization Features:** The growing trend of augmented reality (AR) and customizable interfaces in automotive displays represents a significant opportunity for PGU modules. By incorporating AR, PGU displays can offer more intuitive and engaging interfaces, enabling drivers to visualize power consumption and regeneration in real-time with enhanced clarity. Offering customizable features also boosts the appeal for consumers seeking personalized driving experiences.
- **Sustainability and Eco-Friendly Features:** With increasing consumer and regulatory pressure for sustainability, PGU display modules that emphasize energy optimization and eco-friendly driving practices can create a strong market position. Manufacturers can tap into this growing demand by developing modules that track carbon footprints, optimize energy usage, and encourage sustainable driving behavior.
- **Collaborations and Partnerships with Automotive OEMs:** Strategic partnerships with major automotive original equipment manufacturers (OEMs) present a significant opportunity for growth. By collaborating with OEMs, PGU display module manufacturers can ensure their products are integrated into the latest vehicle designs, from entry-level to premium models, and expand their presence in the global automotive market.
- **Focus on User Experience and Human-Machine Interface (HMI) Innovation:** As user-centric design continues to dominate the automotive industry, the demand for intuitive and easy-to-use interfaces is increasing. PGU display modules that prioritize seamless human-machine interaction (HMI) could open up new opportunities by improving the driving experience, reducing distractions, and enhancing vehicle usability.

The vehicle PGU display module market is positioned for significant growth as the automotive industry embraces more intelligent, efficient, and connected technologies. Strategic opportunities abound in the expansion of electric and hybrid vehicle markets, the integration of smart systems like ADAS and AR, and the growing emphasis on user experience and sustainability. By focusing on technological advancements, strategic partnerships, and customer-centric innovations, manufacturers can capitalize on the

rising demand for sophisticated power management solutions. As the automotive sector continues its transformation towards electrification and connectivity, the Vehicle PGU display module market is set to become a pivotal component in shaping the future of intelligent and efficient transportation.

Vehicle PGU Display Module Market Driver and Challenges

The vehicle PGU (Power Generation Unit) display module market is experiencing rapid expansion due to the increasing demand for advanced automotive technologies, particularly in electric and hybrid vehicles. PGU display modules are integral in providing real-time data about power generation, battery health, energy consumption, and vehicle performance. As the automotive industry shifts towards sustainability and smarter vehicles, the role of these display modules becomes increasingly vital. However, despite the promising growth, the market also faces several challenges, ranging from technological complexity to cost concerns. Understanding both the drivers and challenges of the vehicle PGU (Power Generation Unit) display module market is essential for stakeholders to capitalize on opportunities while mitigating risks.

Market Drivers:

- 1. Growth of Electric and Hybrid Vehicles:** The increasing adoption of electric and hybrid vehicles is a primary driver for the PGU display module market. These vehicles require advanced power management systems to monitor battery health, energy regeneration, and consumption, making PGU displays essential for drivers and manufacturers alike.
- 2. Technological Advancements in Display Technologies:** Innovations in display technologies, including OLED, AMOLED, and high-definition screens, are enhancing the visual quality and interactivity of PGU modules. These advancements make it easier for drivers to monitor and optimize energy consumption, improving vehicle performance and overall efficiency.
- 3. Rising Consumer Demand for Advanced In-Vehicle Features:** Consumers are increasingly demanding more sophisticated, user-friendly, and connected features in their vehicles. PGU display modules that offer intuitive interfaces, real-time energy management, and seamless connectivity with mobile apps are becoming highly desirable in the modern automotive market.
- 4. Regulatory Push for Sustainable Transportation:** Government policies and regulations aimed at reducing carbon emissions are driving automakers to invest in electric vehicles

and hybrid technologies. PGU displays are crucial for helping drivers optimize energy usage, thereby supporting the broader shift toward sustainable, energy-efficient transportation.

Market Challenges:

- 1. High Manufacturing Costs:** The integration of advanced display technologies, high-resolution screens, and energy-efficient components in PGU modules can drive up manufacturing costs. This presents a challenge, particularly for mass-market vehicle models, where cost competitiveness is crucial.
- 2. Technological Complexity and Integration Issues:** Integrating PGU display modules with a variety of vehicle systems—ranging from power generation units to advanced user interfaces—poses technical challenges. Ensuring seamless integration and interoperability between different vehicle subsystems remains a key obstacle for manufacturers.
- 3. Consumer Perception and Adoption:** While PGU display modules offer significant benefits, many consumers may still be unfamiliar with the technology or may perceive it as an unnecessary feature. Educating consumers and convincing them of the value of these displays is critical to driving broader market adoption.
- 4. Data Security and Privacy Concerns:** With the increasing integration of connectivity features and IoT in vehicles, ensuring the security of sensitive data from PGU display modules becomes a growing concern. Unauthorized access to vehicle energy data or remote hacking could undermine consumer confidence in these systems.
- 5. Supply Chain and Component Shortages:** The global automotive industry has faced supply chain disruptions in recent years, with semiconductor shortages being a notable issue. These challenges can delay the production and delivery of PGU display modules, impacting market growth and affecting manufacturers' ability to meet demand.

The vehicle PGU display module market holds significant promise, driven by the rise of electric and hybrid vehicles, advancements in display technologies, and growing consumer demand for smarter, more efficient vehicles. However, challenges such as high manufacturing costs, technological integration issues, and consumer adoption hurdles need to be addressed for sustained market growth. Manufacturers and stakeholders must navigate these obstacles by focusing on cost-effective production methods, seamless system integration, and consumer education to unlock the full

potential of PGU display modules. With the automotive industry continuing its shift towards smarter, more sustainable vehicles, PGU display modules are poised to play an integral role in the future of transportation, provided that these challenges are overcome.

List of Vehicle PGU Display Module Companies

Companies in the market compete on the basis of product quality offered. Major players in this market focus on expanding their manufacturing facilities, R&D investments, infrastructural development, and leverage integration opportunities across the value chain. With these strategies vehicle PGU display module companies cater increasing demand, ensure competitive effectiveness, develop innovative products & technologies, reduce production costs, and expand their customer base. Some of the vehicle PGU display module companies profiled in this report include-

KYOCERA

JDI

Sunny Optical Technology

Zhejiang Crystal-Optech

Huawei

BOE Technology

Microvision

Beijing ASU Tech

Appotronics Corporation

Goertek

Vehicle PGU Display Module by Segment

The study includes a forecast for the global vehicle PGU display module market by type,

application, and region.

Vehicle PGU Display Module Market by Type [Analysis by Value from 2019 to 2031]:

TFT-LCD PGU

DLP PGU

LCOS PGU

Others

Vehicle PGU Display Module Market by Application [Analysis by Value from 2019 to 2031]:

AR-HUD

Car Interior Projector

Car Exterior Projector

Vehicle PGU Display Module Market by Region [Analysis by Value from 2019 to 2031]:

North America

Europe

Asia Pacific

Country Wise Outlook for the Vehicle PGU Display Module Market

Major players in the market are expanding their operations and forming strategic partnerships to strengthen their positions. Here are recent developments in the vehicle PGU (Power Generation Unit) display module market across several countries:

United States: Increased investments in electric vehicle (EV) technology have

driven demand for advanced PGU display modules, with automakers focusing on integrating more intuitive, high-resolution displays for energy management and user interaction.

Germany: Major automotive manufacturers, such as BMW and Volkswagen, are expanding their use of digital cockpit solutions, including PGU display modules, to enhance driver experience and optimize vehicle performance.

China: The Chinese market has seen rapid growth in the adoption of PGU display modules, especially with the rise of new energy vehicles (NEVs) that require advanced power management systems and user-friendly interface displays.

Japan: Japan's automotive sector is increasingly incorporating sophisticated PGU displays for hybrid and electric vehicles, focusing on efficient power monitoring and enhancing the overall driving experience with high-tech interfaces.

Features of the Global Vehicle PGU Display Module Market

Market Size Estimates: Vehicle PGU display module market size estimation in terms of value (\$B).

Trend and Forecast Analysis: Market trends (2019 to 2024) and forecast (2025 to 2031) by various segments and regions.

Segmentation Analysis: Vehicle PGU display module market size by type, application, and region in terms of value (\$B).

Regional Analysis: Vehicle PGU display module market breakdown by North America, Europe, Asia Pacific, and Rest of the World.

Growth Opportunities: Analysis of growth opportunities in different type, application, and regions for the vehicle PGU display module market.

Strategic Analysis: This includes M&A, new product development, and competitive landscape of the vehicle PGU display module market.

Analysis of competitive intensity of the industry based on Porter's Five Forces model.

If you are looking to expand your business in this or adjacent markets, then contact us. We have done hundreds of strategic consulting projects in market entry, opportunity screening, due diligence, supply chain analysis, M & A, and more.

This report answers following 11 key questions:

Q.1. What are some of the most promising, high-growth opportunities for the vehicle PGU display module market by type (TFT-LCD PGU, DLP PGU, LCOS PGU, and others), application (AR-HUD, car interior projector, and car exterior projector), and region (North America, Europe, Asia Pacific, and the Rest of the World)?

Q.2. Which segments will grow at a faster pace and why?

Q.3. Which region will grow at a faster pace and why?

Q.4. What are the key factors affecting market dynamics? What are the key challenges and business risks in this market?

Q.5. What are the business risks and competitive threats in this market?

Q.6. What are the emerging trends in this market and the reasons behind them?

Q.7. What are some of the changing demands of customers in the market?

Q.8. What are the new developments in the market? Which companies are leading these developments?

Q.9. Who are the major players in this market? What strategic initiatives are key players pursuing for business growth?

Q.10. What are some of the competing products in this market and how big of a threat do they pose for loss of market share by material or product substitution?

Q.11. What M&A activity has occurred in the last 5 years and what has its impact been on the industry?

Contents

1. EXECUTIVE SUMMARY

2. GLOBAL VEHICLE PGU DISPLAY MODULE MARKET : MARKET DYNAMICS

2.1: Introduction, Background, and Classifications

2.2: Supply Chain

2.3: Industry Drivers and Challenges

3. MARKET TRENDS AND FORECAST ANALYSIS FROM 2019 TO 2031

3.1. Macroeconomic Trends (2019-2024) and Forecast (2025-2031)

3.2. Global Vehicle PGU Display Module Market Trends (2019-2024) and Forecast (2025-2031)

3.3: Global Vehicle PGU Display Module Market by Type

3.3.1: TFT-LCD PGU

3.3.2: DLP PGU

3.3.3: LCOS PGU

3.3.4: Others

3.4: Global Vehicle PGU Display Module Market by Application

3.4.1: AR-HUD

3.4.2: Car Interior Projector

3.4.3: Car Exterior Projector

4. MARKET TRENDS AND FORECAST ANALYSIS BY REGION FROM 2019 TO 2031

4.1: Global Vehicle PGU Display Module Market by Region

4.2: North American Vehicle PGU Display Module Market

4.2.1: North American Market by Type: TFT-LCD PGU, DLP PGU, LCOS PGU, and Others

4.2.2: North American Market by Application: AR-HUD, Car Interior Projector, and Car Exterior Projector

4.3: European Vehicle PGU Display Module Market

4.3.1: European Market by Type: TFT-LCD PGU, DLP PGU, LCOS PGU, and Others

4.3.2: European Market by Application: AR-HUD, Car Interior Projector, and Car Exterior Projector

4.4: APAC Vehicle PGU Display Module Market

4.4.1: APAC Market by Type: TFT-LCD PGU, DLP PGU, LCOS PGU, and Others

4.4.2: APAC Market by Application: AR-HUD, Car Interior Projector, and Car Exterior Projector

4.5: ROW Vehicle PGU Display Module Market

4.5.1: ROW Market by Type: TFT-LCD PGU, DLP PGU, LCOS PGU, and Others

4.5.2: ROW Market by Application: AR-HUD, Car Interior Projector, and Car Exterior Projector

5. COMPETITOR ANALYSIS

5.1: Product Portfolio Analysis

5.2: Operational Integration

5.3: Porter's Five Forces Analysis

6. GROWTH OPPORTUNITIES AND STRATEGIC ANALYSIS

6.1: Growth Opportunity Analysis

6.1.1: Growth Opportunities for the Global Vehicle PGU Display Module Market by Type

6.1.2: Growth Opportunities for the Global Vehicle PGU Display Module Market by Application

6.1.3: Growth Opportunities for the Global Vehicle PGU Display Module Market by Region

6.2: Emerging Trends in the Global Vehicle PGU Display Module Market

6.3: Strategic Analysis

6.3.1: New Product Development

6.3.2: Capacity Expansion of the Global Vehicle PGU Display Module Market

6.3.3: Mergers, Acquisitions, and Joint Ventures in the Global Vehicle PGU Display Module Market

6.3.4: Certification and Licensing

7. COMPANY PROFILES OF LEADING PLAYERS

7.1: KYOCERA

7.2: JDI

7.3: Sunny Optical Technology

7.4: Zhejiang Crystal-Optech

7.5: Huawei

7.6: BOE Technology

7.7: Microvision

7.8: Beijing ASU Tech

7.9: Appotronics Corporation

7.10: Goertek

I would like to order

Product name: Vehicle PGU Display Module Market Report: Trends, Forecast and Competitive Analysis to 2031

Product link: <https://marketpublishers.com/r/V106079D4C97EN.html>

Price: US\$ 4,850.00 (Single User License / Electronic Delivery)

If you want to order Corporate License or Hard Copy, please, contact our Customer Service:

info@marketpublishers.com

Payment

To pay by Credit Card (Visa, MasterCard, American Express, PayPal), please, click button on product page <https://marketpublishers.com/r/V106079D4C97EN.html>