Automotive Chips

ANMD-MRS7-063 · Advanced Semiconductor Applications

A Global Sustainability Due Diligence & Market Research Study

History 2020–2024 · Base Year 2025 · Forecast 2025–2032 · Outlooks 2035 / 2040 / 2050 · Currency US$

WHY THIS REPORT

Automotive chips are the silicon nervous system of the modern vehicle — the MCUs and SoCs, power and analog ICs, sensor and radar chips, ADAS/compute processors and connectivity devices whose count per car rises with electrification, automation and software-defined architectures. This decision-grade study sizes the global market three ways — value, unit volume and chips-per-vehicle — across product type, application domain and vehicle type, across seven regions and four scenarios to 2032, with outlooks to 2050.

SUSTAINABILITY & SDG IMPACT — THE ANMD LENS

Sustainability is this report's backbone, not an afterthought. Beyond the device, automotive chips enable vehicle electrification, efficiency and safety gains that translate into avoided emissions and reduced road harm.

Mapped Sustainable Development Goals:

SDG 9	SDG 11	SDG 12	SDG 13
Industry, Innovation & Infrastructure	Sustainable Cities & Communities	Responsible Consumption	Climate Action

Measurable sustainability outcomes assessed:

- Vehicle electrification and efficiency enablement
- Safety gains and reduced road harm
- Avoided-emissions contribution across the fleet
- Fabrication carbon, mineral sourcing and repairability as material risks

Framework alignment: Double materiality mapped to GRI, SASB, ISSB, TCFD, TNFD, CSRD and the EU Taxonomy, with greenwashing and SDG-washing screens applied throughout.

WHAT'S INSIDE AT A GLANCE

53 Chapters	**9** Report Parts	**7** Regions Covered	**40+** Country Markets
2025–32 Forecast Horizon	**4** Forward Scenarios	**25+** Companies Profiled	**4** SDGs Mapped

REPORT COVERAGE

Geographic scope: North America, Europe, Asia Pacific, Latin America, Africa, Middle East and Rest of World — with named country intelligence. Europe leads automotive-grade silicon; Asia Pacific is the volume engine; North America drives ADAS and compute; other regions assessed on their own merits.

MARKET OVERVIEW

From distributed ECUs to centralised compute — where chip strategy becomes vehicle strategy.

Automotive silicon is structurally growing as chips-per-vehicle climb. Demand is driven by EV powertrain electronics, ADAS and autonomy, and the shift to centralised, software-defined compute — against a backdrop of resilience-building after recent supply shortages. The market is read three ways — value, unit volume and chips-per-vehicle — and forecast under four scenarios, each region reported separately.

- **Europe leads automotive-grade silicon** — Germany, France and the Netherlands, on deep Tier-1 integration and ASIL/AEC-Q expertise
- **Asia Pacific is the volume engine** — China, Japan and South Korea, on EV production scale and domestic-chip ambition
- **North America drives ADAS and compute** — United States and Israel, on ADAS-compute leadership and CHIPS reshoring
- **Functional safety is the differentiator** — ASIL-rated, AEC-Q-qualified devices command premiums and long qualification cycles

REGIONAL OUTLOOK

Across seven reporting regions, the report separates leading markets from high-growth and emerging ones — each profiled in full rather than aggregated into Rest of World.

Region	Stage	Lead Markets & Drivers
Europe	Automotive-grade leader	Germany, France, Netherlands — Tier-1 chain, ASIL/AEC-Q
Asia Pacific	Volume engine	China, Japan, South Korea — EV scale, domestic-chip ambition
North America	ADAS & compute	United States, Israel — ADAS compute, CHIPS reshoring
Latin America	Emerging	Brazil, Mexico — vehicle assembly, component integration
Africa	Frontier	South Africa, Morocco — assembly hubs, aftermarket
Middle East	Frontier	UAE, Saudi Arabia — EV adoption, mobility investment

KEY MARKET DRIVERS & RESTRAINTS

Drivers	Restraints
• Rising semiconductor content per vehicle • EV powertrain & electrification • ADAS, autonomy & safety mandates • Software-defined vehicle architectures • Supply-chain resilience & reshoring	• Long ASIL/AEC-Q qualification cycles • Legacy-node capacity constraints • Cyclical demand & inventory swings • Geopolitical & export-control exposure • Cost pressure from automotive OEMs

SEGMENTATION SNAPSHOT

By Product Type	MCUs & SoCs · power & analog ICs · sensor & radar chips · ADAS/compute processors · connectivity chips
By Application	ADAS · EV powertrain · infotainment · body electronics · connectivity
By Vehicle Type	Passenger EV · ICE/hybrid · commercial · autonomous platforms
By End User	Automotive OEMs · Tier-1 suppliers · fleet operators
By Safety Class	ASIL-A/B · ASIL-C/D · non-safety
By Business Model	Device sale · IP licensing · foundry · co-design

TABLE OF CONTENTS — PARTS & CHAPTERS

The full report is organised into nine parts across 53 chapters, listed below. Detailed sub-headings, country tables and directories are provided in the full report.

Part V — Company, Competition, Patent and Project Intelligence

Part VI — Sustainability, ESG, SDG, Climate and Natural-Capital Intelligence

Part VII — Supply Chain, Policy, Legal, Economics and Finance

Part VIII — Scenario, Future Intelligence and Final Due Diligence Verdict

Part IX — Annexes, Directories and Reference Material

COMPETITIVE & INVESTMENT SNAPSHOT

The competitive field spans automotive-IDM leaders, Tier-1-aligned suppliers and ADAS-compute specialists. Deal activity — OEM design wins, capacity partnerships and ADAS acquisitions — signals a market consolidating around safety-qualified platforms with long, defensible design cycles.

Representative players profiled in the full report:

Infineon Technologies AG · NXP Semiconductors N.V. · Renesas Electronics Corporation · STMicroelectronics N.V. · Texas Instruments Incorporated · Robert Bosch GmbH · ON Semiconductor Corporation · and 18+ further profiled players.

Investment intelligence: venture, infrastructure, development, climate and blended finance, green bonds and sustainability-linked loans — culminating in a bankability assessment and a conditional investment view.

KEY QUESTIONS THIS REPORT ANSWERS

- How large is the global automotive chips market, and how fast will it grow to 2032?
- Which regions, countries and segments offer the strongest risk-adjusted opportunity?
- How does functional safety change value versus commodity-silicon comparisons?
- Who leads, and where is the competitive and patent white space?
- Is the investment case bankable — and under what conditions?
- How does the category align with the SDGs, mobility decarbonisation and disclosure regulation?

WHY ANMD — THE DIFFERENCE

Most market studies stop at units and revenue. This report is built as a sustainability due diligence instrument — fusing market sizing with ESG, SDG, climate, water and natural-capital intelligence and a decision-ready bankability view in a single architecture.

- **Triangulated sizing** — every market read three ways so value, volume and the physical-unit views reconcile rather than conflict.
- **Region-honest forecasting** — Latin America, Africa and the Middle East reported in full, never hidden inside Rest of World, every forecast resolved to the 2025 base year.
- **Integrated evidence base** — company, patent and project databases linked to the analysis, with published-filing patents and FTO treated as an indicator, not a legal conclusion.
- **No-fabrication discipline** — every estimate carries a data-confidence rating and disclosed sources; gaps are flagged for further diligence, never filled with invented numbers.
- **Anti-greenwashing rigour** — SDG-washing and greenwashing screens plus claim-substantiation checks built into the ESG and project analysis.
- **Decision-first structure** — 9 Parts and 53 Chapters culminating in stakeholder playbooks and a clear, conditional investment view.

WHO SHOULD BUY THIS REPORT

Investors, OEMs, Tier-1 suppliers, fleet operators, foundries, lenders and policymakers, and strategic corporate planners and decision-makers.

Access the Full Report

The complete report delivers all 53 chapters in full, with every sub-heading, country table, company and patent directory, forecast model and due diligence checklist.

Purchase at **www.anewmarketdynamics.com** · Standard & Premium licences · Single-Site (SSL) and Global-Site (GSL) options at checkout.

Want the Complete Detailed Table of Contents?

This prospectus lists the nine parts and 53 chapters. The complete detailed table of contents — every sub-heading, country table, exhibit, company and patent directory and annex — is available on request to registered users. To receive it, register with your official company email at **www.anewmarketdynamics.com**. The full detailed table of contents will be sent directly to your registered company email address.