

Vehicle Control Unit Market Research Report By Vehicle Type (Passenger Vehicle and Commercial Vehicle{ Passenger Vehicle, Commercial Vehicle},Electric Two-Wheeler Type{E-Scooter/Moped, E-Motorcycles} and Off-Highway Electric Vehicle Type{Construction, Mining, Agriculture}), By Propulsion Type (BEV, HEV and PHEV) ,By Voltage Type (12/24V and 36/48V) ,By Capacity (16 bit, 32-bit and 64 bits) ,By Offering Type (Hardware , Software),By Function(Autonomous Driving/ADAS, Predictive Technology) ,By Communication Type (CAN ,LIN, FlexRay) and By Region (North America, Europe, Asia-Pacific, Middle East and Africa, South America) Market Forecast till 2032

Market Report | 2025-02-01 | 195 pages | Market Research Future

AVAILABLE LICENSES:

- Single User Price \$4950.00
- Enterprisewide Price \$7250.00

Report description:

Vehicle Control Unit Market Research Report By Vehicle Type (Passenger Vehicle and Commercial Vehicle{ Passenger Vehicle, Commercial Vehicle},Electric Two-Wheeler Type{E-Scooter/Moped, E-Motorcycles} and Off-Highway Electric Vehicle Type{Construction, Mining, Agriculture}), By Propulsion Type (BEV, HEV and PHEV) ,By Voltage Type (12/24V and 36/48V) ,By Capacity (16 bit, 32-bit and 64 bits) ,By Offering Type (Hardware , Software),By Function(Autonomous Driving/ADAS, Predictive Technology) ,By Communication Type (CAN ,LIN, FlexRay) and By Region (North America, Europe, Asia-Pacific, Middle East and Africa, South America) Market Forecast till 2032

Scotts International. EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com

www.scotts-international.com

Market Overview

The Vehicle Control Unit Market industry is anticipated to experience a compound annual growth rate (CAGR) of 7.7% during the forecast period, increasing from USD 14,413.4 million in 2024 to USD 26,182.88 million by 2032.

The market for vehicle control units (VCUs) is anticipated to experience substantial growth in the years ahead, because of the growing demand for autonomous vehicles, electric vehicles, and advanced driver-assistance systems (ADAS). VCUs are indispensable components of contemporary automobiles, as they regulate numerous functions, including engine management, transmission control, and safety systems. The demand for more sophisticated VCUs with advanced features and capabilities is increasing because of the increasing complexity of these systems. The electrical system of a vehicle is regulated and monitored by the vehicle control unit (VCU). It is accountable for the coordination of the vehicle's powertrain components, which include the battery, engine, transmission, and inverter.

Market segment insights

The Vehicle Control Unit Market is segmented into Passenger Vehicle and Commercial Vehicle, Electric Two-Wheeler Type, and Off-Highway Electric Vehicle Type, based on the type of vehicle.

The market is segmented into BEV, HEV, and PHEV based on the type of propulsion. In 2023, the BEV segment held the greatest market share at 48.7%.

The market is segmented into 12/24V and 36/48V based on voltage type. The market is segmented into 16-bit, 32-bit, and 64-bit segments based on capacity.

The Vehicle Control Unit Market is segmented into Hardware and Software based on the Offering Type. The market is segmented into Autonomous Driving/ADAS and Predictive Technology based on function. The market is segmented into CAN, LIN, and Flexray based on the type of communication.

Regional Market Insights

In 2023, the Vehicle Control Unit Market was dominated by the Asia-Pacific region. Several variables are anticipated to contribute to the Asia Pacific region's status as the fastest-growing market for vehicle control units (VCUs). One of the contributing factors is the implementation of more stringent government regulations. Several Asia-Pacific countries, including China, Japan, South Korea, and India, have implemented robust government policies to encourage the adoption of electric vehicles. Subsidies, tax incentives, rebates, and incentives for manufacturers to invest in EV technology are among the policies that have resulted in an increase in the demand for VCUs in this region.

The Vehicle Control Unit Market in North America is anticipated to experience significant growth because of the increasing prevalence of safety systems in fundamental automobiles. The expansion of the electric vehicle ECU market in the region is anticipated to be facilitated by the increased installation of electronic systems in passenger cars, light commercial vehicles, and SUVs.

The high demand for vehicle control units that govern sophisticated electronic systems in these automobiles is a direct consequence of the growing demand for electric vehicles in Europe. These significantly depend on sophisticated electronic systems that necessitate a central control unit, such as a VCU, to coordinate and optimize a variety of functions, such as powertrain control and battery health monitoring.

Major Players

Continental AG, Robert Bosch GmbH, Texas Instruments Incorporated, Mitsubishi Electric Corporation, STMicroelectronics, Autonomous Solutions, Dana Incorporated, Embitel, Rimac Automobile, and Pues Corporation are among the foremost participants in the Vehicle Control Unit Market.

Table of Contents:

TABLE OF CONTENTS	
1 EXECUTIVE SUMMARY	20

Scotts International. EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com

www.scotts-international.com

2	MARKET INTRODUCTION	22
2.1	DEFINITION	22
2.2	SCOPE OF THE STUDY	22
2.3	RESEARCH OBJECTIVE	22
2.4	MARKET STRUCTURE	23
3	RESEARCH METHODOLOGY	24
3.1	OVERVIEW	24
3.2	DATA FLOW	25
3.2.1	DATA MINING PROCESS	26
3.3	PURCHASED DATABASE:	27
3.4	SECONDARY SOURCES:	28
3.4.1	SECONDARY RESEARCH DATA FLOW:	29
3.5	PRIMARY RESEARCH:	30
3.5.1	PRIMARY RESEARCH DATA FLOW:	31
3.5.2	PRIMARY RESEARCH: NUMBER OF INTERVIEWS CONDUCTED	32
3.5.3	PRIMARY RESEARCH: REGIONAL COVERAGE	32
3.6	APPROACHES FOR MARKET SIZE ESTIMATION:	33
3.6.1	CONSUMPTION & NET TRADE APPROACH	33
3.6.2	REVENUE ANALYSIS APPROACH	33
3.7	DATA FORECASTING	34
3.7.1	DATA FORECASTING TECHNIQUE	34
3.8	DATA MODELING	35
3.8.1	MICROECONOMIC FACTOR ANALYSIS:	35
3.8.2	DATA MODELING:	37
3.9	TEAMS AND ANALYST CONTRIBUTION	39
4	MARKET DYNAMICS	41
4.1	INTRODUCTION	41
4.2	DRIVERS	41
4.2.1	INCREASING ADOPTION OF ELECTRIC VEHICLES (EVs)	41
4.2.2	ADVANCEMENTS IN FUNCTIONAL SAFETY STANDARDS	42
4.2.3	INCREASED DEMAND FOR ADAS AND AUTONOMOUS VEHICLES	42
4.2.4	RAPID GROWTH IN CONSTRUCTION SECTOR	43
4.3	RESTRAINTS	44
4.3.1	HIGH DEVELOPMENT COSTS AS A MAJOR BARRIER	44
4.3.2	VULNERABILITY TO SYSTEM-WIDE FAILURES	44
4.4	OPPORTUNITY	45
4.4.1	OTA (OVER-THE-AIR) UPDATE CAPABILITIES	45
4.4.2	GROWTH IN SHARED AND CONNECTED MOBILITY	45
4.4.3	INTEGRATION OF AI AND MACHINE LEARNING	45
4.4.4	DEMAND FOR ENHANCED INFORMATION SECURITY	46
4.5	TRENDS	47
4.5.1	STRATEGIC PARTNERSHIP TO ENHANCE ECUS FOR AUTOMATED ELECTRIC VEHICLES	47
4.5.2	STRATEGIC PARTNERSHIP TO ENHANCE ECUS FOR AUTOMATED ELECTRIC VEHICLES	47
4.5.3	FOCUS ON ENERGY OPTIMIZATION DRIVING VEHICLE CONTROL UNIT MARKET GROWTH	47
4.5.4	GROWTH OF THE VEHICLE CONTROL UNIT MARKET DUE TO CENTRALIZED SYSTEMS	48
4.5.5	INTEGRATION OF AUTOMATED DRIVING CAPABILITIES	48
4.6	COVID-19 IMPACT ANALYSIS	49

Scotts International. EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com

www.scotts-international.com

4.6.1 IMPACT ON AUTOMOTIVE INDUSTRY	49
4.6.2 IMPACT ON GLOBAL VEHICLE CONTROL UNIT MARKET	50
4.6.3 IMPACT ON SUPPLY CHAIN OF VEHICLE CONTROL UNIT MARKET	50
4.6.4 IMPACT ON MARKET DEMAND OF VEHICLE CONTROL UNIT MARKET	50
4.6.5 IMPACT ON PRICING OF VEHICLE CONTROL UNIT MARKET	51
5 MARKET FACTOR ANALYSIS	52
5.1 SUPPLY CHAIN ANALYSIS	52
5.1.1 RAW MATERIALS AND COMPONENTS SUPPLY	52
5.1.2 DESIGN AND DEVELOPMENT OF VCUS	52
5.1.3 MANUFACTURING AND ASSEMBLY	53
5.1.4 TESTING AND QUALITY CONTROL	53
5.1.5 DISTRIBUTION AND LOGISTICS	53
5.1.6 INTEGRATION AND VEHICLE ASSEMBLY	53
5.1.7 END-USERS	53
5.1.8 AFTERMARKET SUPPORT AND UPGRADES	54
5.2 PORTER'S FIVE FORCES MODEL	54
5.2.1 THREAT OF NEW ENTRANTS	55
5.2.2 BARGAINING POWER OF SUPPLIERS	55
5.2.3 THREAT OF SUBSTITUTES	55
5.2.4 BARGAINING POWER OF BUYERS	56
5.2.5 INTENSITY OF RIVALRY	56
6 GLOBAL VEHICLE CONTROL UNIT MARKET, BY VEHICLE TYPE	58
6.1 INTRODUCTION	58
6.2 PASSENGER & COMMERCIAL TYPE	59
6.2.1 PASSENGER VEHICLE	59
6.2.2 COMMERCIAL VEHICLE	60
6.3 ELECTRIC TWO-WHEELER TYPE	60
6.3.1 E-SCOOTER/MOPED	60
6.3.2 E-MOTORCYCLES	60
6.4 OFF-HIGHWAY ELECTRIC VEHICLE TYPE	60
6.4.1 CONSTRUCTION	60
6.4.2 MINING	60
6.4.3 AGRICULTURE	61
7 GLOBAL VEHICLE CONTROL UNIT MARKET, BY PROPULSION TYPE	62
7.1 INTRODUCTION	62
7.2 BEV	63
7.3 HEV	63
7.4 PHEV	63
8 GLOBAL VEHICLE CONTROL UNIT MARKET, BY VOLTAGE TYPE	64
8.1 INTRODUCTION	64
8.2 12/24V	65
8.3 36/48V	65
9 GLOBAL VEHICLE CONTROL UNIT MARKET, BY CAPACITY	66
9.1 INTRODUCTION	66
9.2 16 BIT	67
9.3 32-BIT	67
9.4 64-BIT	67

Scotts International. EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com

www.scotts-international.com

- 10 GLOBAL VEHICLE CONTROL UNIT MARKET, BY OFFERING TYPE 68
 - 10.1 INTRODUCTION 68
 - 10.2 HARDWARE 69
 - 10.3 SOFTWARE 69
- 11 GLOBAL VEHICLE CONTROL UNIT MARKET, BY FUNCTION 70
 - 11.1 INTRODUCTION 70
 - 11.2 AUTONOMOUS DRIVING/ADAS 71
 - 11.3 PREDICTIVE TECHNOLOGY 71
- 12 GLOBAL VEHICLE CONTROL UNIT MARKET, BY COMMUNICATION TYPE 72
 - 12.1 INTRODUCTION 72
 - 12.2 CAN 73
 - 12.3 LIN 73
 - 12.4 FLEXRAY 73
- 13 GLOBAL VEHICLE CONTROL UNIT MARKET, BY REGION 74
 - 13.1 OVERVIEW 74
 - 13.2 NORTH AMERICA 75
 - 13.2.1 US 80
 - 13.2.2 CANADA 82
 - 13.2.3 MEXICO 84
 - 13.3 EUROPE 87
 - 13.3.1 GERMANY 91
 - 13.3.2 UK 93
 - 13.3.3 FRANCE 95
 - 13.3.4 RUSSIA 97
 - 13.3.5 ITALY 99
 - 13.3.6 SPAIN 101
 - 13.3.7 REST OF EUROPE 104
 - 13.4 ASIA-PACIFIC 106
 - 13.4.1 CHINA 110
 - 13.4.2 INDIA 112
 - 13.4.3 JAPAN 114
 - 13.4.4 SOUTH KOREA 116
 - 13.4.5 MALAYSIA 119
 - 13.4.6 THAILAND 121
 - 13.4.7 INDONESIA 123
 - 13.4.8 REST OF ASIA-PACIFIC 125
 - 13.5 MIDDLE EAST & AFRICA 128
 - 13.5.1 GCC COUNTRIES 131
 - 13.5.2 SOUTH AFRICA 133
 - 13.5.3 REST OF MIDDLE EAST & AFRICA 136
 - 13.6 SOUTH AMERICA 139
 - 13.6.1 BRAZIL 142
 - 13.6.2 ARGENTINA 144
 - 13.6.3 REST OF SOUTH AMERICA 147
- 14 COMPETITIVE LANDSCAPE 151
 - 14.1 INTRODUCTION 151
 - 14.2 COMPETITOR DASHBOARD 152

Scotts International. EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com

www.scotts-international.com

14.3	COMPANY MARKET SHARE ANALYSIS, 2023	153
14.4	KEY DEVELOPMENTS & GROWTH STRATEGIES	154
14.4.1	PARTNERSHIP/COLLABORATION, INVESTMENT, EXPANSION, AND OTHERS MERGER & ACQUISITION	154
15	COMPANY PROFILES	156
15.1	CONTINENTAL AG	156
15.1.1	COMPANY OVERVIEW	156
15.1.2	FINANCIAL OVERVIEW	156
15.1.3	PRODUCTS OFFERED	157
15.1.4	KEY DEVELOPMENTS	158
15.1.5	SWOT ANALYSIS	158
15.1.6	KEY STRATEGIES	159
15.2	ROBERT BOSCH GMBH	160
15.2.1	COMPANY OVERVIEW	160
15.2.2	FINANCIAL OVERVIEW	160
15.2.3	PRODUCTS OFFERED	161
15.2.4	KEY DEVELOPMENTS	161
15.2.5	SWOT ANALYSIS	162
15.2.6	KEY STRATEGIES	162
15.3	TEXAS INSTRUMENTS INCORPORATED	164
15.3.1	COMPANY OVERVIEW	164
15.3.2	FINANCIAL OVERVIEW	164
15.3.3	PRODUCTS OFFEREDS	165
15.3.4	KEY DEVELOPMENTS	165
15.3.5	SWOT ANALYSIS	166
15.3.6	KEY STRATEGIES	166
15.4	mitsubishi electric corporation	167
15.4.1	COMPANY OVERVIEW	167
15.4.2	FINANCIAL OVERVIEW	168
15.4.3	PRODUCTS/SOLUTIONS/SERVICES OFFERED	168
15.4.4	KEY DEVELOPMENTS	169
15.4.5	SWOT ANALYSIS	169
15.4.6	KEY STRATEGIES	170
15.5	STMICROELECTRONICS NV	171
15.5.1	COMPANY OVERVIEW	171
15.5.2	FINANCIAL OVERVIEW	172
15.5.3	PRODUCTS OFFERED	172
15.5.4	KEY DEVELOPMENTSS	173
15.5.5	SWOT ANALYSIS	173
15.5.6	KEY STRATEGIES	173
15.6	AUTONOMOUS SOLUTIONS, INC.	174
15.6.1	COMPANY OVERVIEW	174
15.6.2	FINANCIAL OVERVIEW	174
15.6.3	PRODUCTS OFFERED	174
15.6.4	KEY DEVELOPMENTS	175
15.6.5	SWOT ANALYSIS	175
15.6.6	KEY STRATEGIES	175
15.7	DANA INCORPORATED	176

Scotts International. EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com

www.scotts-international.com

- 15.7.1 COMPANY OVERVIEW 176
- 15.7.2 FINANCIAL OVERVIEW 176
- 15.7.3 PRODUCTS OFFERED 177
- 15.7.4 KEY DEVELOPMENTS 177
- 15.7.5 SWOT ANALYSIS 178
- 15.7.6 KEY STRATEGIES 178
- 15.8 EMBITEL 179
- 15.8.1 COMPANY OVERVIEW 179
- 15.8.2 FINANCIAL OVERVIEW 180
- 15.8.3 PRODUCTS OFFERED 180
- 15.8.4 KEY DEVELOPMENTS 180
- 15.8.5 SWOT ANALYSIS 180
- 15.8.6 KEY STRATEGIES 181
- 15.9 RIMAC AUTOMOBILI 182
- 15.9.1 COMPANY OVERVIEW 182
- 15.9.2 FINANCIAL OVERVIEW 182
- 15.9.3 PRODUCTS OFFERED 182
- 15.9.4 KEY DEVELOPMENTS 183
- 15.9.5 SWOT ANALYSIS 183
- 15.9.6 KEY STRATEGIES 183
- 15.10 PUES CORPORATION 184
- 15.10.1 COMPANY OVERVIEW 184
- 15.10.2 FINANCIAL OVERVIEW 184
- 15.10.3 PRODUCTS OFFERED 184
- 15.10.4 KEY DEVELOPMENTS 184
- 15.10.5 SWOT ANALYSIS 185
- 15.10.6 KEY STRATEGIES 185
- 15.11 DATA CITATIONS 187

Scotts International. EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com

www.scotts-international.com

Vehicle Control Unit Market Research Report By Vehicle Type (Passenger Vehicle and Commercial Vehicle{ Passenger Vehicle, Commercial Vehicle}, Electric Two-Wheeler Type{E-Scooter/Moped, E-Motorcycles} and Off-Highway Electric Vehicle Type{Construction, Mining, Agriculture}), By Propulsion Type (BEV, HEV and PHEV) ,By Voltage Type (12/24V and 36/48V) ,By Capacity (16 bit, 32-bit and 64 bits) ,By Offering Type (Hardware , Software),By Function(Autonomous Driving/ADAS, Predictive Technology) ,By Communication Type (CAN ,LIN, FlexRay) and By Region (North America, Europe, Asia-Pacific, Middle East and Africa, South America) Market Forecast till 2032

Market Report | 2025-02-01 | 195 pages | Market Research Future

To place an Order with Scotts International:

- Print this form
- Complete the relevant blank fields and sign
- Send as a scanned email to support@scotts-international.com

ORDER FORM:

Select license	License	Price
	Single User Price	\$4950.00
	Enterprisewide Price	\$7250.00
		VAT
		Total

*Please circle the relevant license option. For any questions please contact support@scotts-international.com or 0048 603 394 346.

** VAT will be added at 23% for Polish based companies, individuals and EU based companies who are unable to provide a valid EU Vat Numbers.

Scotts International. EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com

www.scotts-international.com

Email*	<input type="text"/>	Phone*	<input type="text"/>
First Name*	<input type="text"/>	Last Name*	<input type="text"/>
Job title*	<input type="text"/>		
Company Name*	<input type="text"/>	EU Vat / Tax ID / NIP number*	<input type="text"/>
Address*	<input type="text"/>	City*	<input type="text"/>
Zip Code*	<input type="text"/>	Country*	<input type="text"/>
		Date	<input type="text" value="2025-06-24"/>
		Signature	<input type="text"/>