World OEM Automotive Electronics

Industry Study with Forecasts for 2014 & 2019

Study #2728 | February 2011 | $6100 | 391 pages
Table of Contents

EXECUTIVE SUMMARY

MARKET ENVIRONMENT

General .......................................................... 4
World Economic Overview ................................ 5
Recent Historical Trends ................................... 6
World Economic Outlook ................................... 8
World Population Overview .............................. 11
World Households .......................................... 13
World Light Vehicle Overview ......................... 15
Light Vehicle Production .................................. 15
Light Vehicle Sales ......................................... 19
Environmental & Regulatory Factors ................. 21
Regulatory Convergence ................................ 26
Drivers of Regulatory Change ........................... 28
Pricing Trends ................................................. 30
Automotive Electronics .................................... 32
Electronics Technology Evolution ..................... 33
Software Standardization & In-Vehicle Networks ... 36
Technology Penetration Profiles ....................... 38
Market Pull ................................................. 40
Regulatory Push ........................................... 40
Rapid Penetration .......................................... 41
Niche .......................................................... 41
Electronics Integration ..................................... 42

OVERVIEW

General .......................................................... 47
OEM Automotive Electronics Demand & Vehicle Production ... 49
Demand by Product ......................................... 52
Powertrain & Emissions Electronics ..................... 56
Electronic Transmissions ................................... 59
Electronic Fuel Injection Systems ..................... 60
Engine Management Systems ............................ 61
Cruise Control Systems ................................... 62
Exhaust/Emission & Other Controls .................... 63
Safety & Security Electronics ........................... 64
Airbag Systems .............................................. 66
Other Safety Electronics .................................. 67
ABS/ESP/TCS .............................................. 68
Security Electronics Systems ........................... 69
Comfort, Convenience & Entertainment Electronics .... 70
Entertainment Systems .................................... 72
Other CCE Electronics .................................... 74
Instrumentation Electronics ............................... 75
Dashboard Instruments & Displays ..................... 76
Backup Monitors & Head-Up Displays ................. 77
Other Related Systems .................................... 78
Communication & Navigation Electronics .......... 78

Wireless Devices & Adapters ....................... 79
Telematics & Navigation Systems ..................... 80
Foreign Trade in OEM Automotive Electronics .... 81

NORTH AMERICA

General .......................................................... 83
OEM Automotive Electronics Demand ................ 86
United States ............................................... 89
Canada ....................................................... 97
Mexico ......................................................... 102

WESTERN EUROPE

General .......................................................... 108
OEM Automotive Electronics Demand ............... 110
Germany .................................................... 113
France ....................................................... 119
Spain ......................................................... 125
United Kingdom ........................................... 129
Italy ............................................................ 135
Belgium ....................................................... 140
Sweden ....................................................... 143
Other Western Europe .................................... 149

ASIA/PACIFIC

General .......................................................... 153
OEM Automotive Electronics Demand ............... 155
Japan ........................................................... 158
China ........................................................... 165
South Korea .................................................. 171
India ............................................................ 177
Thailand ....................................................... 182
Australia ....................................................... 186
Other Asia/Pacific .......................................... 190

OTHER REGIONS

Central & South America ................................ 195
Macroeconomic & Light Vehicle Overview .......... 195
OEM Automotive Electronics Demand ............... 198
Brazil .......................................................... 199
Argentina ..................................................... 205
Other Central & South America ......................... 208
Eastern Europe ............................................. 212

Macroeconomic & Light Vehicle Overview .......... 212
OEM Automotive Electronics Demand ............... 215
Poland ........................................................ 216
Czech Republic ............................................ 220
Russia ........................................................ 224
Other Eastern Europe ..................................... 230
Africa/Mideast ............................................. 234

Macroeconomic & Light Vehicle Overview .......... 234
OEM Automotive Electronics Demand ............... 237

Turkey .......................................................... 238
Iran ............................................................. 242
Other Africa/Mideast ....................................... 246

INDUSTRY STRUCTURE

General .......................................................... 250
Industry Composition & Market Share ............... 252
Research & Product Development ..................... 257
Manufacturing .............................................. 259
Strategic Alliances & Cooperative Agreements .... 261
Marketing & Distribution ............................... 268
Financial Issues & Requirements ..................... 270
Mergers, Acquisitions & Industry Restructuring .... 271

COMPANY PROFILES

Aisin Seiki ..................................................... 278
Alps Electric .................................................. 282
ArvinMeritor Incorporated .............................. 285
Autoliv Incorporated ..................................... 287
BorgWarner Incorporated ............................... 289
Bosch (Robert) .............................................. 293
Calsonic Kansai ............................................ 299
Continental AG ............................................. 301
Delphi Automotive ....................................... 306
DENSO Corporation ....................................... 310
Fiat SpA ....................................................... 316
Ford Motor ................................................... 320
General Motors ............................................. 322
Hella KGaA Hueck ......................................... 324
Hitachi Limited .............................................. 327
Inteva Products ............................................. 331
Johnson Controls .......................................... 333
Key Safety Systems ........................................ 335
Lear Corporation ........................................... 338
Magnavox International ................................... 341
Microsoft Corporation .................................... 346
Mitsubishi Electric ......................................... 348
NXP BV ....................................................... 351
OMRON Corporation ...................................... 353
Panasonic Corporation .................................... 356
Pioneer Corporation ....................................... 358
Shenzhen Hangsheng Electronics ..................... 360
Siemens AG .................................................. 362
SKF AB ....................................................... 364
STMicroelectronics NV .................................... 366
Takata Corporation ....................................... 369
Toyota Motor ............................................... 371
TRW Automotive ......................................... 374
Valeo SA ..................................................... 378
Visteon Corporation ....................................... 383
Yazaki Corporation ........................................ 388
List of Tables/Charts

EXECUTIVE SUMMARY
1 Summary Table..................................... 3

MARKET ENVIRONMENT
1 World Gross Domestic Product by Region ....11
2 World Population by Region .................... 13
3 World Households by Region .................... 14
4 World Light Vehicle Production by Region ... 19
5 World Light Vehicle Sales by Region .......... 21
Ch1 Evolution of Automotive Electronics ....34
Ch1 Framework for Assessing Automotive Technology Penetration ...39
Ch1 Automotive Electronics Integration Issues 44

OVERVIEW
1 World OEM Automotive Electronics Demand by Region .................. 49
Ch1 OEM Automotive Electronics Demand & Vehicle Production, 2009 ........ 52
2 World OEM Automotive Electronics Demand by Product Class .......... 56
3 World Powertrain & Emissions Electronics Demand .................... 59
4 World Safety & Security Electronics Demand ....................... 66
5 World Comfort, Convenience & Entertainment Electronics Demand .... 72
6 World Instrumentation Electronics Demand ......................... 76
7 World Communication & Navigation Electronics Demand ............ 79

NORTH AMERICA
1 North America: Macroeconomic Environment ...................................... 86
2 North America: OEM Automotive Electronics Demand .................. 89
3 United States: Macroeconomic Environment .................................... 92
4 United States: OEM Automotive Electronics Demand .................. 97
5 Canada: Macroeconomic Environment ........................................ 99
6 Canada: OEM Automotive Electronics Demand ......................... 101
7 Mexico: Macroeconomic Environment ..................................... 104
8 Mexico: OEM Automotive Electronics Demand ....................... 107

WESTERN EUROPE
1 Western Europe: Macroeconomic Environment ............................ 110
2 Western Europe: OEM Automotive Electronics Demand ................. 113
3 Germany: Macroeconomic Environment .................................... 116
4 Germany: OEM Automotive Electronics Demand .................... 119
5 France: Macroeconomic Environment .................................... 121
6 France: OEM Automotive Electronics Demand .................... 124
7 Spain: Macroeconomic Environment .................................... 127
8 Spain: OEM Automotive Electronics Demand .................... 129
9 United Kingdom: Macroeconomic Environment .......................... 132
10 United Kingdom: OEM Automotive Electronics Demand ........ 135
11 Italy: Macroeconomic Environment .................................... 137
12 Italy: OEM Automotive Electronics Demand ..................... 139
13 Belgium: Macroeconomic Environment .................................. 141
14 Belgium: OEM Automotive Electronics Demand .................. 143
15 Sweden: Macroeconomic Environment .................................. 145
16 Sweden: OEM Automotive Electronics Demand .................. 148
17 Other Western Europe: Macroeconomic Environment .............. 150
18 Other Western Europe: OEM Automotive Electronics Demand ........ 152

ASIA/PACIFIC
1 Asia/Pacific: Macroeconomic Environment .................................. 155
2 Asia/Pacific: OEM Automotive Electronics Demand .................. 158
3 Japan: Macroeconomic Environment .................................... 161
4 Japan: OEM Automotive Electronics Demand ..................... 165
5 China: Macroeconomic Environment .................................... 168
6 China: OEM Automotive Electronics Demand ..................... 171
7 South Korea: Macroeconomic Environment .......................... 174
8 South Korea: OEM Automotive Electronics Demand ................ 176
9 India: Macroeconomic Environment .................................... 179
10 India: OEM Automotive Electronics Demand ..................... 182
11 Thailand: Macroeconomic Environment .................................. 184
12 Thailand: OEM Automotive Electronics Demand .................. 186
13 Australia: Macroeconomic Environment ......................... 188
14 Australia: OEM Automotive Electronics Demand .................. 190
15 Other Asia/Pacific: Macroeconomic Environment .................. 192
16 Other Asia/Pacific: OEM Automotive Electronics Demand ........ 194

OTHER REGIONS
1 Central & South America: Macroeconomic Environment .............. 197
2 Central & South America: OEM Automotive Electronics Demand ......... 199
3 Brazil: Macroeconomic Environment ..................................... 202
4 Brazil: OEM Automotive Electronics Demand .................... 204
5 Argentina: Macroeconomic Environment .................................. 206
6 Argentina: OEM Automotive Electronics Demand .................... 208
7 Other Central & South America: Macroeconomic Environment ....... 210
8 Other Central & South America: OEM Automotive Electronics Demand .... 212
9 Eastern Europe: Macroeconomic Environment .......................... 214
10 Eastern Europe: OEM Automotive Electronics Demand ............ 216
11 Poland: Macroeconomic Environment .................................... 218
12 Poland: OEM Automotive Electronics Demand .................... 220
13 Czech Republic: Macroeconomic Environment ....................... 222
14 Czech Republic: OEM Automotive Electronics Demand ............ 224
15 Russia: Macroeconomic Environment .................................... 227
16 Russia: OEM Automotive Electronics Demand ...................... 229
17 Other Eastern Europe: Macroeconomic Environment .............. 232
18 Other Eastern Europe: OEM Automotive Electronics Demand ......... 234
19 Africa/Mideast: Macroeconomic Environment .......................... 236
20 Africa/Mideast: OEM Automotive Electronics Demand ............ 238
21 Turkey: Macroeconomic Environment .................................... 240
22 Turkey: OEM Automotive Electronics Demand ...................... 242
23 Iran: Macroeconomic Environment .................................... 244
24 Iran: OEM Automotive Electronics Demand ...................... 246
25 Other Africa/Mideast: Macroeconomic Environment .............. 248
26 Other Africa/Mideast: OEM Automotive Electronics Demand ........ 249

INDUSTRY STRUCTURE
1 OEM Automotive Electronics Sales by Company, 2009 .................. 253
Ch1 World OEM Automotive Electronics Market Share, 2009 .............. 254
2 Selected Cooperative Agreements .................................... 254
3 Selected Acquisitions & Divestitures .................................. 273
Automotive electronics demand will be boosted in part by increasing regulatory pressure and the continued search among automakers for cost-effective ways to differentiate their products.

World demand to rise 12.4% yearly through 2014

In a rebound from depressed 2009 levels, global demand for light vehicle original equipment manufacturer (OEM) automotive electronics will advance 12.4 percent annually to $177 billion in 2014. Beyond the expected recovery from the 2009 recession, automotive electronics demand will be boosted by increasing regulatory pressure and the continued search among automakers for cost-effective ways to differentiate their products using electronic systems.

Emerging markets focus on basic electronics

Demand for OEM automotive electronics in developed markets is largely mature, with even mass-market vehicles featuring up to nine airbags, advanced electronic stability program (ESP) technologies and the latest entertainment systems. Emerging markets typically have more basic electronics needs and focus mostly on technologies that are now standard in developed countries. Examples include basic safety technologies such as standard airbags or antilock brake systems (ABS), powertrain and emissions applications like port fuel injection, and closed-loop catalytic converter systems. Another growing dynamic in many emerging markets is demand for comfort, convenience and entertainment offerings such as power windows, door locks and powerful audio heads, all of which car buyers value for their visible status.

Communication, navigation electronics to record most rapid sales increases

Safety and security electronics will register a strong increase in demand through 2014, as more advanced safety features percolate down into mass market vehicles. Powertrain and emissions electronics will also post solid gains, driven by stringent new fuel economy and emissions standards in developed markets, particularly the US and Western Europe. Growing from a small base, communication and navigation electronics will record the most rapid sales increases as more OEMs integrate these handy technologies into their vehicles. Instrumentation and comfort, convenience and entertainment electronics will have lower but still attractive growth rates as more emerging market players install these features in their vehicles to meet customer demand.

In developed automotive markets, the coming decade is rapidly shaping up to be one focused on expanding the driver’s capabilities to react to events or to see further and anticipate more fully any potential challenge ahead on the roadway, and electronics technologies are slated to play major roles. However, in the medium term, a new focus on frugality in these markets could reduce interest in the latest OEM automotive electronics applications.
As in the US and the major West European auto producing countries, light-vehicle electronic content in Japan-produced light vehicles has been among the highest in the world, and the domestic market is now mature. Japanese vehicles routinely incorporate electronic features such as anti-lock brakes, airbags, cruise control, navigation systems, instrument clusters, keyless entry, electronic stability control, and the like. In addition, Japan has increasingly become a manufacturing center for luxury and performance vehicles that are sold around the world, thus increasing the overall electronics content for vehicles produced in the country. Light vehicles produced in Japan are routinely available with sophisticated items such as trip computers, intelligent navigation systems, automatic temperature controls, voice-activated systems, pedestrian and obstacle detection systems, cellular telephones, advanced autosound systems, and many other electronic technologies. These features rely on electronics systems to operate.

Demand for powertrain and emissions electronics in Japan will grow 9.4 percent annually to $11.3 billion in 2014, driven in part by vehicles destined for export to the US and other countries. Lower growth rates are symptomatic of the mature nature of many of the electronics used in powertrain applications, as well as the abilities of OEMs and suppliers to continually reduce the costs of these electronics. On the other hand, one reason the growth in this area remains relatively healthy is that, while Japanese OEMs have transplanted vehicle assembly outside of Japan, they have typically continued to produce highline and luxury cars at home due to concerns regarding quality and lower profitability issues compared to smaller vehicles. Furthermore, Honda, Nissan, and Toyota build many of their HEVs, PHEVs and BEVs in Japan, and these vehicles feature significant levels of powertrain electronics.

Demand for safety and security automotive electronics in Japan will increase 10.4 percent per year to $9.0 billion in 2014. Advances will
Microsoft Corporation

1 Microsoft Way
Redmond, WA 98052
425-882-8080
http://www.microsoft.com

Sales:  $62.5 billion (FY 2010)
Geographic Sales:  (FY 2010, as percent of total) US 58% and Other Countries 42%
Employment:  89,000 (FY 2010)

Key Products:  automotive software platform

Microsoft develops, manufactures, licenses, markets and supports a wide range of software products for computing devices. The Company also develops and manufactures certain hardware products, including video game consoles and digital music and entertainment devices, and provides consulting and product support services. Microsoft operates through six segments: Windows and Windows Live, Server and Tools, Online Services, Microsoft Business, Entertainment and Devices, and Unallocated and Other.

The Company is active in the world OEM automotive electronics industry through the Entertainment and Devices segment, which had FY 2010 sales of $8.1 billion. The segment develops, produces and markets a range of entertainment consoles; games; consumer software and hardware; and mobile device software, operating systems and platforms. Among its products is the WINDOWS AUTOMOTIVE software platform, which is designed to control in-vehicle communications, entertainment, navigation and other electronic features. This platform incorporates MICROSOFT TELLME speech technology, a speech recognition technology that enables drivers to access directions, music, and calls.

“Consumption of OEM automotive electronics in Japan will increase 9.5 percent annually to $26.9 billion in 2014, accounting for 36 percent of total regional demand -- a continuing drop as new players such as China ramp up automotive production. Most of the expected growth will result from a market rebound from the global economic recession. Also providing gains will be the continued increase in electronics content per-vehicle, especially in ...”

--Section VI, pg. 161
Corporate Use License

Now every decision maker in your organization can act on the key intelligence found in all Freedonia studies. For an additional $2600, companies receive unlimited use of an electronic version (PDF) of the study. Place it on your intranet, e-mail it to coworkers around the world, or print it as many times as you like.

Click here to learn more about the Corporate Use License

ORDER FORM

World OEM Automotive Electronics........................ $6100

☐ Corporate Use License (add to study price) *

☐ Additional Print Copies @ $600 each *

☐ Enclosed is my check (5% discount) drawn on a US bank and payable to The Freedonia Group, Inc., in US funds (Ohio residents add 7.75% sales tax)

☐ Bill my company ☐ American Express ☐ MasterCard ☐ Visa

☐ Country

☐ Signature

* Please check appropriate option and sign below to order an electronic version of the study.

☐ Corporate Use License Agreement

The above captioned study may be stored on the company’s intranet or shared directory, available to company employees. Copies of the study may be made, but the undersigned represents that distribution of the study will be limited to employees of the company.

☐ Individual Use License Agreement

The undersigned hereby represents that the above captioned study will be used by only ___ individual(s) who are employees of the company and that the study will not be loaded on a network for multiple users. In the event that usage of the study changes, the Company will promptly notify Freedonia of such change and will pay to Freedonia the appropriate fee based on Freedonia’s standard fee schedule then in effect. Note: Entire company corporate use license, add $2600; one additional user, add $600; two additional users, add $1200; three additional users, add $1800.

☐ Signature

* Please check appropriate option and sign below to order an electronic version of the study.
About The Freedonia Group

The Freedonia Group, Inc., is a leading international industry market research company that provides its clients with information and analysis needed to make informed strategic decisions for their businesses. Studies help clients identify business opportunities, develop strategies, make investment decisions and evaluate opportunities and threats. Freedonia research is designed to deliver unbiased views and reliable outlooks to assist clients in making the right decisions. Freedonia capitalizes on the resources of its proprietary in-house research team of experienced economists, professional analysts, industry researchers and editorial groups. Freedonia covers a diverse group of industries throughout the United States, the emerging China market, and other world markets. Industries analyzed by Freedonia include:

- Chemicals
- Plastics
- Life Sciences
- Packaging
- Building Materials
- Security & Electronics
- Industrial Components & Equipment
- Automotive & Transportation Equipment
- Household Goods
- Energy/Power Equipment

Freedonia Custom Research

Freedonia Custom Research delivers the same high quality, thorough and unbiased assessment of an industry or market as an industry study. Since the research initiative is based upon a company’s specific needs, companies harness Freedonia’s research capabilities and resources to answer unique questions. When you leverage the results of a Freedonia Custom Research engagement, you are able to obtain important answers to specific questions and issues associated with: mergers and acquisitions, new product launches/development, geographic expansion, entry into new markets, strategic business planning, and investment and funding decisions.

Freedonia Custom Research is ideal for companies seeking to make a strategic difference in the status quo and focus on future business growth. Working side by side with clients, Freedonia’s team is able to define a research project that is custom-tailored to answer specific questions and provide the basis from which a company can make informed business decisions.