

Market Analysis & Forecasts



Tactical Analysis of the World Industrial/Medical Electronics Market & Supply Chain

2016 Edition | Market Analysis and Forecasts to 2021
June 2016 | 147 Pages

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Abstract

The industrial and medical market remains the most challenging sector for semiconductor manufacturers to serve and the supply chain is both complicated and fragmented. In practice industrial is a collection of markets within a market, while medical applications range from high reliability medical imaging and implantable electronics, to consumer wearables such as health & fitness monitors. Owing to this complexity, the sector has historically been overlooked by many semiconductor vendors, who have elected instead to focus their marketing efforts on higher value and less complicated verticals.

Unlike other markets, the application base making up the industrial and medical sector covers a broad range, from factory automation, to test & measurement, to consumer medical. The supply chain is highly fragmented, with few OEMs covering the broad market and most focused on just one or two areas. This makes a tactical analysis of leading manufacturers of industrial and medical electronics a complicated and time consuming process for semiconductor suppliers to undertake comprehensively.

To support this need, Semicast has developed this study to focus on the tactical needs of semiconductor, software and related equipment suppliers looking to identify the key equipment types driving manufacturer revenues in the industrial and medical sector and who the leading OEMs are to focus resource on. First published in 2008, the 2016 edition of the research builds on the work of the previous studies, using 2015 as the base year, with forecasts provided to 2021.

This study has been developed to be used as a companion report to the Semicast study [Industrial/Medical Semiconductor Service](#), which provides analysis of strategic trends for semiconductors in industrial/medical applications. Used together, the reports provide a comprehensive tactical and strategic analysis of the industrial and medical sector for semiconductor, software and electronics vendors.

Overview & Key Features

- Analysis of 130 industrial/medical equipment types (full list provided on pages 3&4).
- 22 tables summarizing market share estimates of the leading manufacturers in each market segment and sub-segment in 2015.
- Over 900 equipment suppliers identified, almost 600 of which had estimated industrial/medical electronics revenues in excess of \$100 million in 2015.
- Estimate and forecast for worldwide production volumes for each equipment type (2015-21).
- Estimate and forecast for manufacturer average prices for each equipment type (2015-21).
- Estimate and forecast for manufacturer revenues for each equipment type (2015-21).
- Highly quantitative analysis, with discussion summarized in short, easy to read bullet points.
- Analyst support time to answer all reasonable questions relating to forecasts and conclusions.

Industrial/Medical Market Segments & Sub-segments

The study segments the market for industrial/medical electronics systems into nine segments and further sub-segments as follows:

Segment

- Factory Automation & Control
- Motor Drives
- Lighting, Building Automation , HVAC & Refrigeration
- EPOS, EFT & ID
- Test & Measurement
- Consumer Medical
- Medical Imaging & Diagnostics
- Power & Energy
- Industrial Transport

Additional sub-segmentation

- Control & Compute, Process Measurement & Field Instruments, Switchgear, Misc. Automation
- Lighting, Building Automation, HVAC & Refrigeration
- Application Specific Test & Measurement, General Purpose Test & Measurement, Instrumentation & Other Equipment
- Medical Imaging, Diagnostics/Therapy & Monitoring

Industrial/Medical Equipment Coverage

The equipment types analyzed in the study are as follows:

Factory Automation & Control: Control & Compute [Industrial Ethernet Infrastructure, Computer Numerical Control, Industrial PCs, Embedded Computer Boards & Modules, HMIs & Operator Panels, Machine Vision Inspection Systems, PLCs & PACs, Distributed & Remote I/O Modules] ; **Process Measurement & Field Instruments** [Process Analytical Instruments, Flow Measurement, Level Measurement, Pressure Measurement, Temperature Measurement, Process Variable Transmitters, Telemetry / RTUs, Process/Temperature Controllers, Position Sensing] ; **Switchgear** [Circuit Breakers, Contactors, Protection Relays, Solid State Relays] ; **Miscellaneous Automation** [Pumps, Robotics, Semiconductor Manufacturing & Test Equipment, Welding].

Motor Drives: AC Drives, DC Drives, Servo Drives, Stepper Drives, Soft Starters/Brakes.

Lighting, Building Automation, HVAC & Refrigeration: **Lighting** [Electronic Ballasts/Lamps & Modules, Lighting Controls, Street Lights/Traffic Lights & Control] ; **Building Automation** [Fire Detection, Fire Alarm Control Panels & Annunciators, Fire Alarm Notification, Intruder Alarm Control Panels, Intruder Detection & Notification, CCTV/Video Surveillance Cameras, CCTV/Video Surveillance Equipment, Electronic Access Control, Elevators & Escalators] ; **HVAC & Refrigeration** [Boilers & Warm Air Furnaces, Circulator Pumps, Compressors, Electronic Room Thermostats & Controls, Humidifiers/Dehumidifiers, Unitary Air Conditioners, Commercial Refrigeration].

EPOS, EFT & ID: ATMs, Handheld EFT Transaction Terminals, POS Authentication Pads, EPOS/ECR/Cash Drawer, Handheld Data Terminals, Fuel Dispensers, Vending/Payment/Change Machines, Card Readers, Coin Acceptors & Currency Validators, Printers, Scanners, Smart Cards.

Test & Measurement: Application Specific T&M [Automotive Test Equipment, Broadband Test Equipment, Fiber Optic Test Equipment, Wireless Test Equipment, Other Test Equipment] ; **General Purpose T&M** [Counters & Timers, Logic Analyzers, Digital Multimeters, Network Analyzers, Digital Oscilloscopes, PC-based Test Equipment, RF Power Meters, PXI/VXI-based Test Equipment, Signal/Function Generators, Spectrum Analyzers, Other General Purpose T&M] ; **Instrumentation & Other Equipment** [Calibration Instruments, pH/ORP Instruments, Chart Recorders & Data Acquisition, Laboratory Instrumentation, Scales & Weighing Equipment, Non-Destructive Test Equipment].

Consumer Medical: Blood Glucose Meters, Blood Pressure Monitors, Telehealth Gateways, Fitness Monitors, Electronic Thermometers, Pregnancy Testers/Fertility Monitors.

Medical Imaging & Diagnostics: Medical Imaging [CT, Ultrasound, MRI, PET/PET-CT, CR/DR, Picture Archiving & Communications] ; **Diagnostics, Therapy & Monitoring** [ECG, Dialysis Machines, Medical Ventilators, Point-of-care Testing, Pulse Oximetry Monitoring, Multiparameter Patient Monitors, Medical Lasers, Medical Endoscopes, Infusion Pumps, Pacemakers, Implantable Cardioverter Defibrillators, Cardiac Resynchronization Therapy, Pain Management Devices, External Defibrillators, Digital Hearing Aids, Sleep Diagnostics, Therapy & Interfaces, Fitness Machines, Electronic Beds, Electronic Wheelchairs, Powered Scooters].

Power & Energy: AC/DC Power Supplies, DC/DC Converters, DC/AC Power Inverters, Industrial Battery Chargers, UPS, Generators, Smart Utility Meters, Electric Vehicle Charging Stations & Infrastructure, Distribution & Substation Automation, Renewable Energy.

Industrial Transport: Construction, Lifting & Mining, Agricultural Equipment, Materials Handling Vehicles, Refrigerated Trailers, Electric Motorized Vehicles, Rolling Stock, Signaling & Systems.

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Example Tables

System Revenues in the Factory Automation & Control Sector by Equipment Type

Revenues (US\$ Millions)	2015	2016	2017	2018	2019	2020	2021	CAGR (15/21)	DIFF (15-21)	SUM (15>21)
Control & Compute										
Industrial Ethernet Infrastructure										
Computer Numerical Control (CNC)										
Industrial PCs										
Embedded Computer Boards & Modules										
HMI's & Operator Panels										
Machine Vision Inspection Systems										
PLCs & PACs										
Distributed & Remote I/O Modules										
Process Measurement & Field Instruments										
Process Analytical Instruments										
Flow Measurement										
Level Measurement										
Pressure Measurement										
Temperature Measurement										
Process Variable Transmitters										
Telemetry / RTUs										
Process/Temperature Controllers										
Position Sensing										
Switchgear										
Circuit Breakers										
Contactors										
Protection Relays										
Solid State Relays										
Miscellaneous Automation										
Pumps										
Robotics										
Semiconductor Manufacturing & Test Equipment										
Welding										
Sector Total										
Annual Growth Rate										

Market Share Estimates for Suppliers of
 Factory Automation & Control Electronics in 2015
 (Sector Total)

Supplier	Market Share
1	
2	
3	
4=	
4=	
6	
7	
8	
9	
10=	
10=	
12=	
12=	
14	
15=	
15=	
15=	
18=	
18=	
18=	
21=	
21=	
21=	
24	
25	
Others	100.0%
2015 Market Size:	100.0%

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Analyst Biography

Colin Barnden - Principal Analyst



Colin joined Semicast Research in 2006 and is principal analyst for semiconductor research and vice president of business development. Prior to joining Semicast, he worked for 12 years at IMS Research, rising to the position of Senior Research Director of its Semiconductor Research Group and responsible for analyst coverage on the analog/mixed signal, optoelectronic and embedded processing industries. Colin also set-up and established IMS Research's Automotive Electronics Group. During his tenure, Colin authored dozens of reports and became a well respected industry analyst. He holds a B.S. in Electronic Engineering from Aston University, England and has more than twenty years of experience as an industry analyst.

About Semicast

Founded in 2006, Semicast has an established reputation at most top 20 semiconductor suppliers, with areas of expertise covering industrial and medical electronics and semiconductors; under-the-hood automotive electronics; automotive audio, infotainment & navigation systems; automotive semiconductors; and embedded processing.

With more than twenty years of market research experience, our analysts use a combination of technical expertise, a proven method for producing electronics focused market research and specific applications knowledge to produce concise and timely research to help you make effective business decisions.

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