

# Microcontroller Market Tracker

By Tom Hackenberg, Sr. Principal Analyst & Christopher Morris, Senior Analyst

## ACTUALS AND FORECAST

### Frequency

- 5-year annual forecast (2019 – 2023)
- Base historic years (2015 – 2018)

### Measures

- Revenues, Units, ASP and Growth Rates
- Supplier Market Shares
  - By Class, Market and Region
- MCU Revenue per Core IP by Market

### Regional Summary

- Americas, EMEA, Japan, Mainland China and Other APAC **expanded**

### Forecast by:

- Class (4-bit, 8-bit, 16-bit and 32-bit)
- Vertical markets
- IoT Domain Penetration

### Competitive Landscape by:

- Class (4-bit, 8-bit, 16-bit and 32-bit)
- Vertical markets
- Region (Americas, EMEA, Japan, Mainland China and Other APAC) **expanded**

### IoT Domain Penetration

- Device Application

### Design Features

- Class (4-bit, 8-bit, 16-bit and 32-bit)
- Vertical markets

## VERTICAL MARKETS & APPLICATIONS COVERED

### Automotive Electronics

- Power Train, Hybrid & Electric Vehicles, Infotainment, Connectivity & Telematics, ADAS, Body & Convenience and Other Automotive

### Industrial Electronics

- Medical Electronics, Motors & Drives, Operator Terminals, Industrial PCs, Single Board Computers, Computer Numerical Controllers, Programmable Logic Controllers, Distributed Control Systems, Industrial Networking Equipment, I/O Network Cards & Modules, Test & Measurement, Other Automation, Security & Video Surveillance, Building & Home Control, Metering, Energy Generation & Distribution, Military & Aerospace, and Other Industrial

### Data Processing

- 23 applications

### Consumer Electronics

- 26 applications

### Wired Communications

- 17 applications

### Wireless Communications

- 15 applications

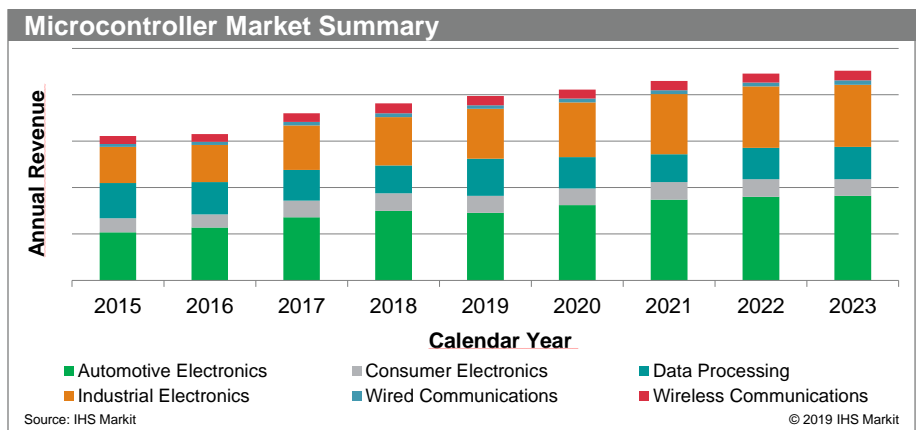
### IoT Framework

- 25 applications

**108 total applications**

## Semi-annual service tracking the microcontroller market and ecosystem

In terms of unit volume, the microcontrollers (MCU)s market is approximately three times that of all other processors combined. These MCUs are part of the foundation of several of today's technology paradigm shifts. MCUs play a role in IoT, sensor fusion, distributed intelligence, energy management, wearable technologies, secure communications, building and industrial automation, autonomous driving and more.



The Microcontroller Market Tracker is a unique source of semiannual guidance on this valuable and competitive market. Whether you design, manufacture or distribute MCUs, MCU intellectual property, the tools to design them, the software that gives them purpose or just the capital investment to make it all happen, this report is essential for a competitive understanding of the entire microcontroller ecosystem.

In addition to the key market parameters listed on the side bar, this valuable service offers insights into unique features not found in the typical market report – quantitative analysis by function, I/O & subsystems, frequency, memory, node, multicore and more.

## Key Issues Addressed

- What are the top MCU markets by market size? By growth opportunity?
- Who are the market share leaders? By class? By market?
- What is a “core IP ecosystem” and why is it important?
- Where can I locate MCU vendors and the kind of products they sell?
- How can I evaluate what regions to target for my unique MCU solution?
- Are all MCUs migrating to 32-bit? Why or why not?
- What are the top MCU design features?
- Where do MCUs compete with other System-on-Chips? Who's winning?

## Applicable To

- MCU suppliers
- Foundry Services
- Embedded and Core IP providers
- Operating system vendors
- Software developers
- Related component suppliers (Sensors, Transceiver, etc.)
- Connectivity solutions specialists
- Portable device designers
- OEM/ODM Design Engineers
- Embedded Security Specialists
- IoT Developers
- Technology Investors
- Automotive, Industrial, Connectivity and other Electronics Standards Bodies.

## LEAD ANALYSTS

### Tom Hackenberg – Principal Analyst, Processors

Tom provides expertise on the market for microcontrollers and digital signal processors across a broad range of application specific, multimarket and general purpose applications. Tom is well versed in all processor components including CPUs, GPUs, MPUs, MCUs, ASICs & ASSPs, FPGAs and configurable processors. He also supports the Automotive Semiconductors group developing a more in depth perspective in the largest revenue market for microcontrollers.

Tom comes to IHS through IHS acquisition of IMS Research in 2012; at IMS Research his specialization was in semiconductors and embedded processing research since 2006. Tom holds a BSEE specializing in Processors and FPGAs. His background also includes database programming, PC hardware support, IT support, adult education and human resources.

### Christopher Morris – Senior Analyst, Processors

Christopher (Chris) Morris is a senior research analyst for the processor markets, with a focus on microcontrollers in the telecommunications, automotive, consumer, and industrial markets. His work also covers microprocessors, signal processors, application-specific processors, configurable logic processors, and system-on-chip (SoC) solutions.

Chris holds a Bachelor of Science degree in Electrical Engineering from the University of Texas at Dallas, US.

## ABOUT IHS MARKIT TECHNOLOGY, MEDIA AND TELECOM

IHS Markit technology, media and telecom solutions include research, analysis and strategic guidance for the technology ecosystem. We help you understand the market's current needs and anticipate its future trends.

From semiconductors and displays to telecommunications and media, we combine deep knowledge with rigorous analysis to reveal the powerful interdependencies among raw materials, components, applications and enabling technologies.

## Database Content Summary

### Component & Sector Forecasts

#### MCU Class Annual Summaries

- Rev, Growth & Share
- Rev, Units & ASP

#### Market Annual Summaries

- Rev, Growth & Share
- Rev, Units & ASP

#### MCU Class Quarterly Summaries

- Rev, Growth & Share
- Rev, Units & ASP

#### Market Quarterly Summaries

- Rev, Growth & Share
- Rev, Units & ASP

#### Six Detailed Market Application Tables

- Automotive Electronics
- Consumer Electronics
- Data Processing
- Industrial Electronics
- Wired Communications
- Wireless Communications
  - Rev, Growth & Share
  - Rev, Units & ASP

#### Application/Technology Highlights

- IoT Forecast by 8/16-bit & 32-bit
- Top Volume Applications
- Top Growth Opportunities
- Multimarket Data Summaries (effects of excluding Automotive and Smart Cards) **new**

## Report Table of Contents

Executive Summary  
Microcontroller Tracker Introduction  
Featured Topic (varies by edition)  
Microcontroller Market Overview  
Annual Performance by Market

- Automotive Electronics
- Consumer Electronics
- Data Processing
- Industrial Electronics
- Wired Communications
- Wireless Communications

## Competitive Landscape

### Supplier Landscape

- Vendor List
- Top 20 Suppliers Overall Share
- Top 5 Suppliers per Class
- Top 5 Suppliers per Market

### Core Architecture Ecosystem

- Top Ranked MCU revenue by Core IP

### Regional Highlights

- Regional Class Shares
- Regional Market Shares
- Regional Top 5 Supplier Leaders

## Design Highlights

### MCU Market Revenue Share by Design Features

- Revenue by Functional Design
  - By Class and Market
- Revenue by I/O Characteristics
  - By Class and Market
- Revenue by Environmental Operations
  - By Class and Market
- Revenue by Integrated Memory
  - By Class and Market
- Revenue by Frequency
  - By Class and Market
- Revenue by Process Node
  - By Class and Market
- Revenue by Multicore
  - By Asymmetric and Symmetric

### Additional Tables

- Pivot Table and Forecast Pivot Data
- Market, Application and Class Definitions

Microcontroller Application Trends  
Competitive Landscape  
Microcontroller Design Trends  
Appendix – Market/Class Definitions

The Microcontroller Tracker Report is presented in presentation layout style with qualitative highlights of the data presented in the associated database. It includes dozens of graphs and key topical discussions as well as a featured topical market dynamic in each edition.

For more information [technology.ihs.com](http://technology.ihs.com)

## WORLDWIDE

T +1 844 301 7334

E [technology\\_us@ihsmarkit.com](mailto:technology_us@ihsmarkit.com)  
[technology\\_apac@ihsmarkit.com](mailto:technology_apac@ihsmarkit.com)  
[technology\\_emea@ihsmarkit.com](mailto:technology_emea@ihsmarkit.com)

## About IHS Markit

IHS Markit (Nasdaq: INFO) is a world leader in critical information, analytics and solutions for the major industries and markets that drive economies worldwide. The company delivers next-generation information, analytics and solutions to customers in business, finance and government, improving their operational efficiency and providing deep insights that lead to well-informed, confident decisions. IHS Markit has more than 50,000 key business and government customers, including 85 percent of the Fortune Global 500 and the world's leading financial institutions. Headquartered in London, IHS Markit is committed to sustainable, profitable growth.