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## Automotive MCU Sales to Surge 23% in 2021 Despite Shortages

32-bit designs are expected to generate almost 77% of automotive microcontroller revenues this year, followed by 18% from 16-bit and 6% from 8-bit, says Mid-Year Update report.

The huge market for automotive microcontrollers—which accounted for about 40% of total MCU sales over the last decade—has been on an uneven ride in the past several years. After climbing 12% in 2017, worldwide automotive MCU sales slowed to a crawl in 2018, rising just 1%. A borderline global recession stalled demand for new vehicles in 2019, and then came the outbreak of the Covid-19 virus pandemic, which wrecked the worldwide economy in 2020.

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Once the worst of the coronavirus-driven downturn was over in the summer of 2020, automotive and other end-use markets stabilized and demand returned by the end of the year. But ramping up deliveries of MCUs and other semiconductors produced on decades-old 200mm wafer fab lines with less-than leading-edge processes, lagged behind the rebound-driven upturn. Despite some ongoing shortages of microcontrollers and automakers having to temporarily close assembly lines this year, automotive MCU sales are forecast to surge 23% in the economic recovery of 2021 to a record-high level of \$7.6 billion, followed by strong increases of 14% in 2022 and 16% in 2023 (Figure 1), according to IC Insights' *Mid-Year Update to The McClean Report 2021*.

## Automotive Microcontrollers

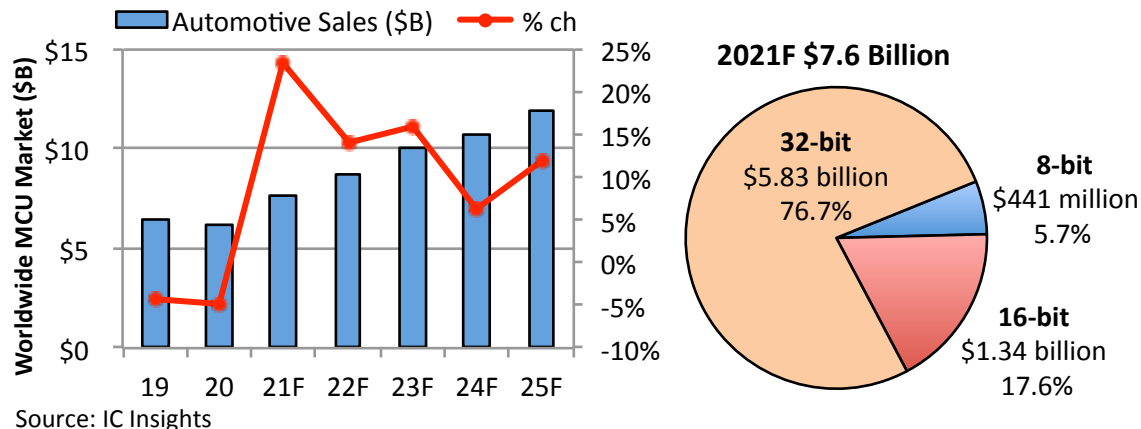


Figure 1

Despite some setbacks in the first half of 2021—such as wafer fabs being shut down by massive power outages in Texas during a historic arctic cold wave in February and heavy damage by fire to a few wafer processing plants in Japan, IC makers say they are ramping up automotive MCU production. For instance, foundry giant Taiwan Semiconductor Manufacturing Company (TSMC) said in July 2021 that it was on pace to increase its 3Q21 wafer fab capacity by 60% for automotive microcontrollers compared to production outputs a year earlier and 30% higher than pre-pandemic levels.

More than three fourths of automotive MCU sales come from 32-bit microcontroller designs, with about \$5.8 billion expected this year followed by 16-bit revenues forecast at \$1.3 billion and 8-bit at \$441 million in 2021 (Figure 1). Higher average selling prices for 32-bit MCUs are helping to push up sales volumes this year partly because of tight supplies in the market. The mid-year forecast shows the ASP for all 32-bit MCUs rising 13% in 2021 to \$0.72 after dropping by a compound annual growth rate (CAGR) of -4.4% between 2015 and 2020.

Automotive infotainment (entertainment and information systems that retrieve digital maps, identify locations, and access data from the Internet and satellite transmissions) is expected to account for 10% of automotive MCU sales in 2021 (about \$780 million) while microcontrollers used in the other parts of vehicles (engine controls, power train, brakes, steering, power windows, battery management, etc.) are forecast to represent 90% of the revenues this year (\$6.8 billion). Infotainment MCU sales are forecast to climb 59% in 2021 from \$495 million in 2020, while the rest of auto MCU revenues are expected to rise by 20% from about \$5.7 billion last year, says IC Insights' *Mid-Year Update*.

### **Report Details: The 2021 McClean Report**

The 2021 edition of *The McClean Report—A Complete Analysis and Forecast of the Integrated Circuit Industry* was released in January 2021 and the *Mid-Year Update* in July 2021. A subscription to *The McClean Report* includes **free** monthly updates from March through November (including a 180+ page *Mid-Year Update*), and **free** access to subscriber-only pre-recorded webcasts through November. An individual user license to the 2021 edition of *The McClean Report* is available for \$5,390 and a multi-user worldwide corporate license is available for \$8,590. The Internet access password and the information accessible to download will be available through November 2021.

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