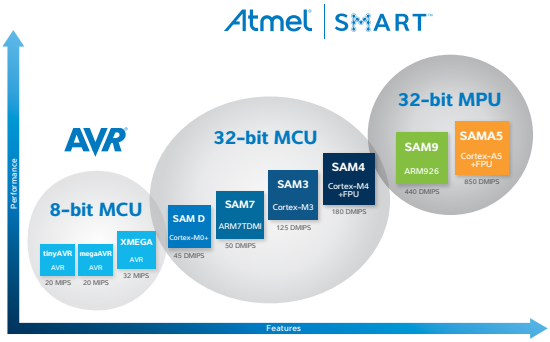
# Atmel–Integrating the Internet of Things

## Inspiring Smart and Secure Connected Designs for IoT

## Powering IoT for Next-Gen Designs

A world where all types of electronic devices connect via the internet represents an enormous opportunity for developers. By powering the edge nodes that form the link between individual devices and the gateways that connect to the cloud, Atmel® enables makers and designers with all the basic building blocks for Internet of Things (IoT) applications—from embedded processing and connectivity to sensors, security, and software—and tie it all together with a rich ecosystem of design tools and development partners.

At each step along the way, we bring innovation, ease-of-use, and integrated solutions, so you can conserve power, extend battery life, ensure data security, and conform to wireless standards in your next big IoT design.




## Embedded Processing

Based on proven technology and groundbreaking innovation, Atmel AVR® and ARM®-based microcontrollers (MCUs) deliver a unique combination of performance and power efficiency.

Atmel AVR® 8-bit MCUs are based on the industry's most code-efficient architecture for C and assembly language programming, Atmel | SMART ARM-based MCUs and MPUs include ARM7™ and ARM Cortex®-M0+, -M3 and -M4-based Flash MCUs, as well as ARM926™ and ARM Cortex-A5-based MPUs. Flexible and highly integrated, Atmel | SMART ARM-based devices are designed to optimize your system control, connectivity, and user interface management, all while delivering low power and ease of use.

## Security

Trust is one of the most important elements of the IoT. If users are going to use the IoT, they must trust that the "things" are real, that the data transferred back and forth has not been tampered with, and that the data is kept confidential. Atmel CryptoAuthentication™ devices with protected hardware key storage offer the ideal way to ensure trust. There is no need to be a crypto expert. Atmel does all the ultra-secure crypto-engineering, and delivers tiny protected hardware devices, that come complete with all the tools needed to make it easy to add security into any digital system.

## Sensing

Onboard sensors are an essential part of the IoT, giving connected devices the ability to track and respond to environmental conditions. Sensing requirements have changed from simple monitoring to simultaneous analysis and fusion of data from different sensors and sensor types. This includes accelerometers, gyroscopes and magnetometers, as well as environment sensors like light level, color, temperature, pressure, humidity, etc.

To simplify sensing development, Atmel has partnered with market-leading sensor manufacturers and sensor software providers to offer a complete system solution running on the Atmel platform. This design ecosystem allows you to focus on differentiating your product features, enhancing the user experience, and getting your product to market quickly.

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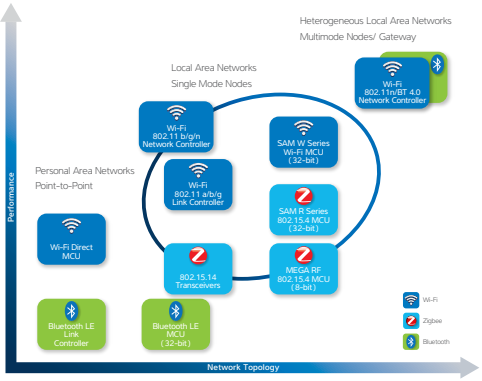
With QTouch® technology Atmel offers market-proven hardware and firmware for implementing non-mechanical buttons, sliders, and wheels on any touch-sensitive device. This solution enhances the user experience with excellent precision and reliability. The QTouch solution is available both as application-specific devices, as well as the QTouch Suite, which is ideal for embedding buttons, sliders, and wheels functionality into the Atmel AVR and Atmel | SMART ARM-based microcontrollers.

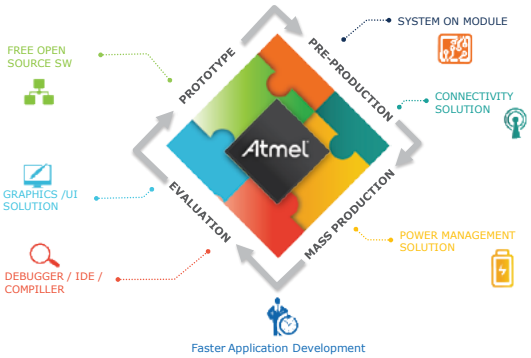
## Communication

Efficient and effective wireless applications require standards-based technology, powerful transceivers that support a wide range of frequencies, and devices that strike an optimum balance between high-performance and low power use. Atmel wireless technologies cover multiple in-demand wireless arenas to enable IoT communication:

- 802.15.4 (Zigbee,® 6LoWPan)
- Bluetooth
- Wi-Fi

To help accelerate integration, Atmel offers wireless solutions in SoC (system-on-chip) and modules that provide the ideal solutions for designers with no previous wireless or RF experience seeking to add connectivity.




## Making it Easy

Choosing the right set of development tools makes all the difference. Atmel supplies a comprehensive development platform with advanced features, an extensive software ecosystem, and powerful debug integration. Plus, all our products run in the same software ecosystem, so you don't have to switch between different IDEs. The result? You can create the right design, faster than ever.

Atmel | Enabling Unlimited Possibilities®

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