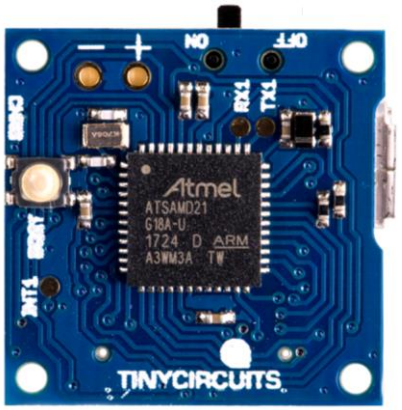
CSE

Microcontroller Application



Created by

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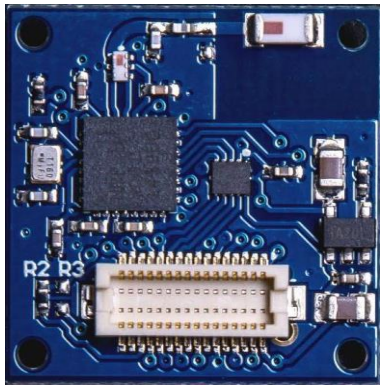
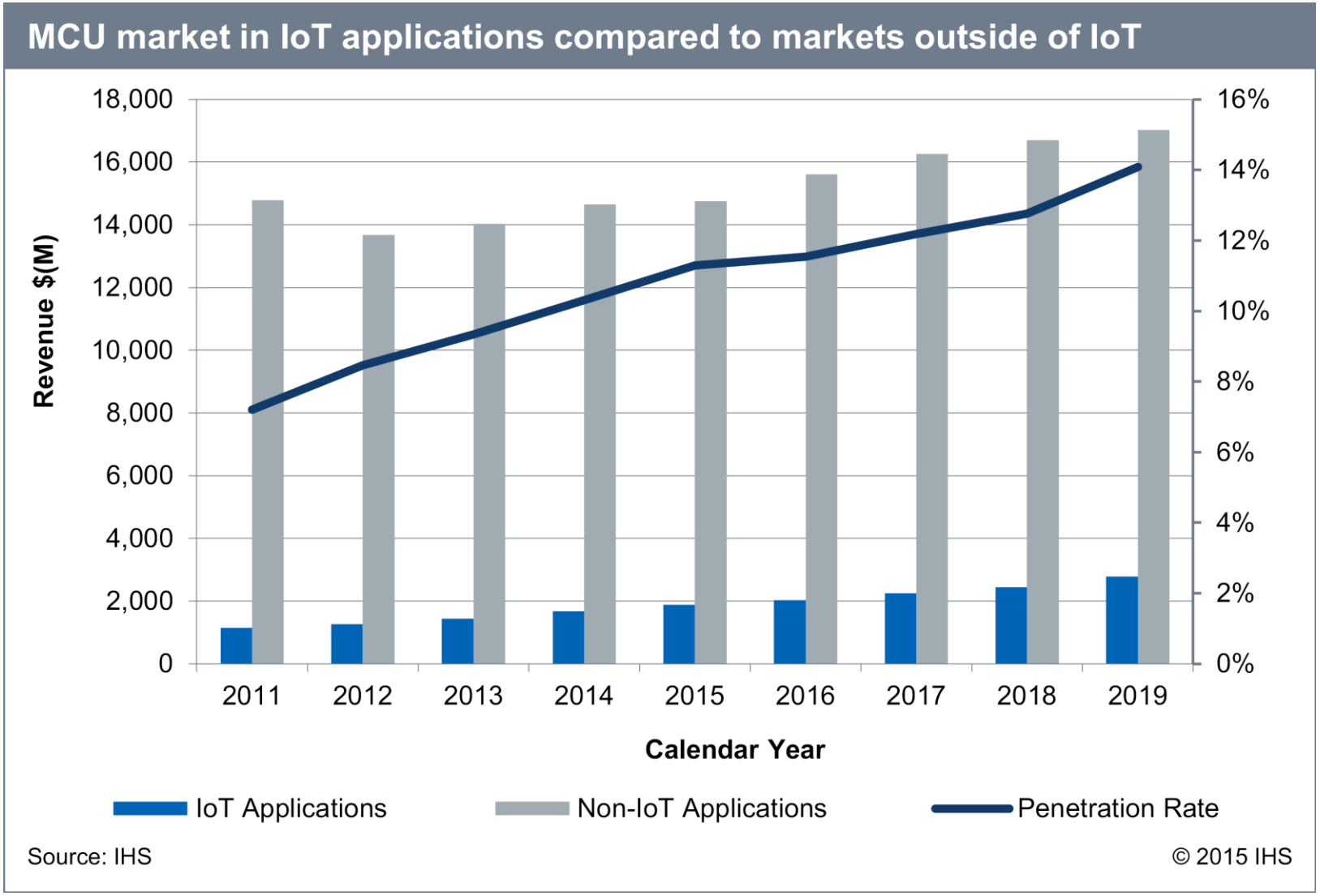


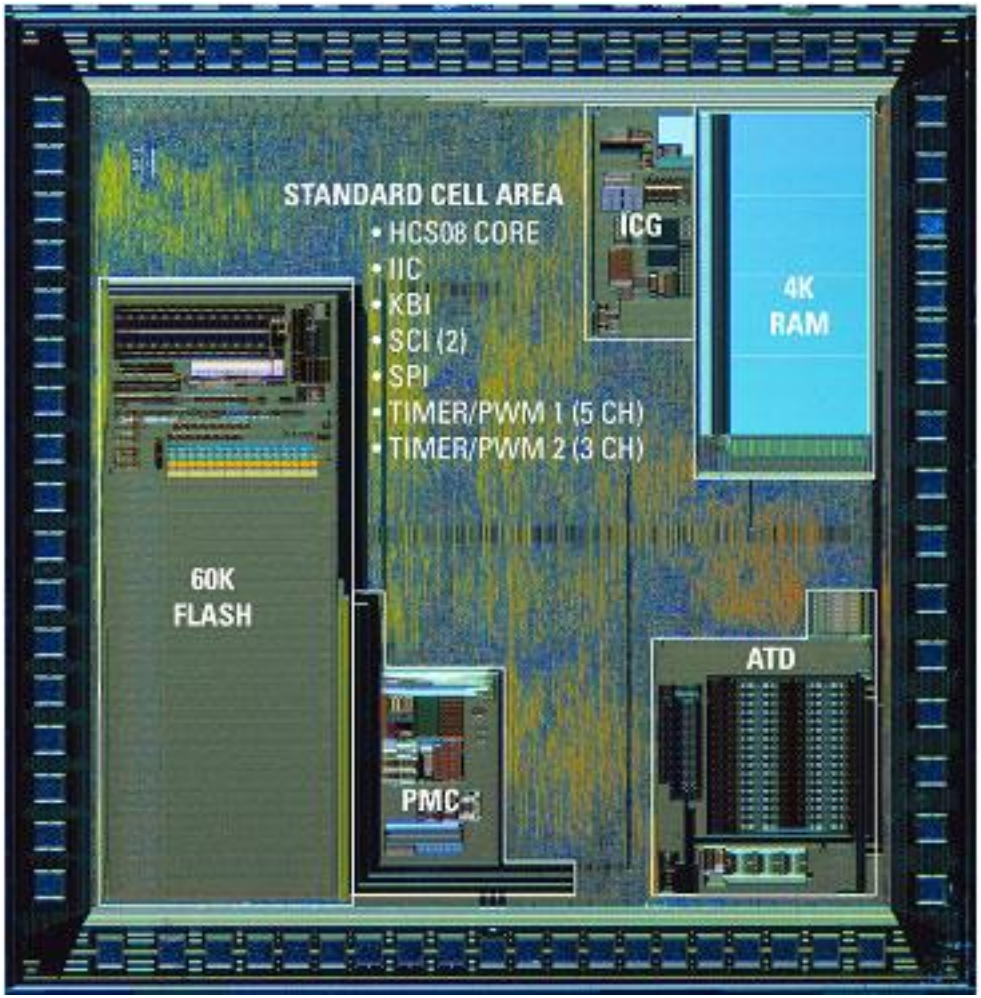
Introduction to Microcontrollers



Introduction to Microcontrollers

- A microcontroller (MCU) is a small computer on a single integrated circuit consisting of a relatively simple central processing unit (CPU) combined with peripheral devices such as memories, I/O devices, and timers.
  - By some accounts, more than half of all CPUs sold worldwide are microcontrollers

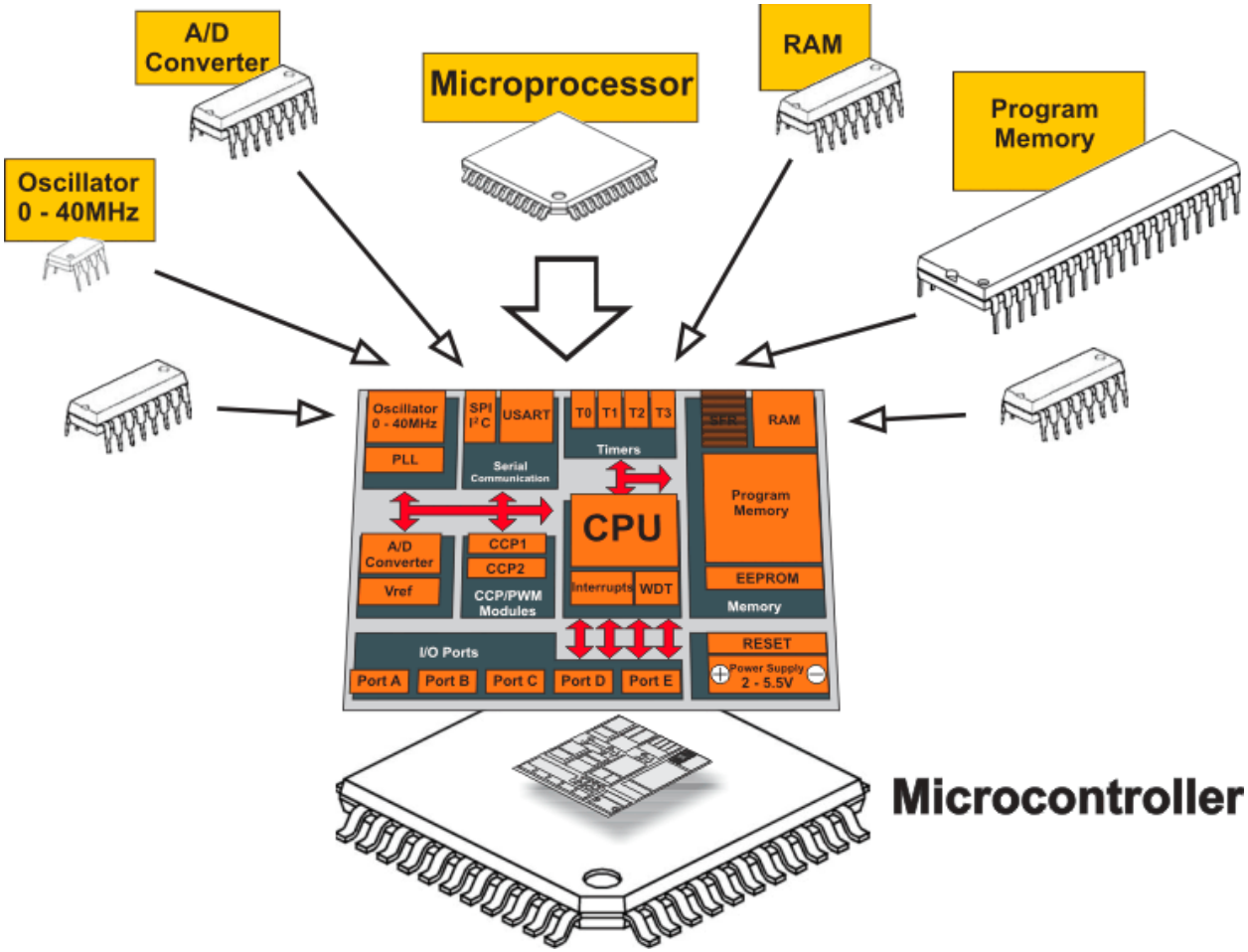
Die shot of a microcontroller



Microcontroller VS Microprocessor

- A microcontroller is a small computer on a single integrated circuit containing a processor core, memory, and programmable input/output peripherals.
- A microprocessor incorporates the functions of a computer's central processing unit (CPU) on a single integrated circuit.

Microcontroller VS Microprocessor



Types of Processors

- In general-purpose computing, the variety of instruction set architectures today is limited, with the Intel x86 architecture overwhelmingly dominating all.
- There is no such dominance in embedded computing. On the contrary, the variety of processors can be daunting to a system designer.
- Things that matter
  - Peripherals, Concurrency & Timing, Clock Rates, Memory sizes (SRAM & flash), Package sizes

Types of Microcontrollers