

System-on-a-Chip (SoC)

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A **System-on-a-Chip (SoC)** is a microchip with all the necessary electronic circuits and parts for a given system, such as a smartphone or wearable computer, on a single integrated circuit (IC).

An SoC for a sound-detecting device, for example, might include an audio receiver, an analog-to-digital converter (ADC), a microprocessor, memory, and the input/output logic control for a user - all on a single chip.

System-on-a-Chip (SoC) technology is used in small, increasingly complex consumer electronic devices. Some such devices have more processing power and memory than a typical 10-year-old desktop computer. In the future, SoC-equipped nanorobots (robots of microscopic dimensions) might act as programmable antibodies to fend off previously incurable diseases. SoC video devices might be embedded in the brains of blind people, allowing them to see and SoC audio devices might allow deaf people to hear. Handheld computers with small whip antennas might someday be capable of browsing the Internet at megabit-per-second speeds from any point on the surface of the earth.

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