



Small, Energy-saving Devices

We provide semiconductor devices with increasingly advanced functions and high-performance that help our customers build greener products.

The contribution of LSIs to IT products

In recent years, as IT product functions become increasingly advanced, they consume much less power and are lighter and more compact.



The NEC Electronics Group contributes to the achievement of these diametrically opposed requirements by making semiconductor devices that are smaller, contain more advanced functions, and consume less power per functional unit to provide solutions that help customers produce energy-saving products.

Examples of LSI contributions

USB controller (ECOUSB™)

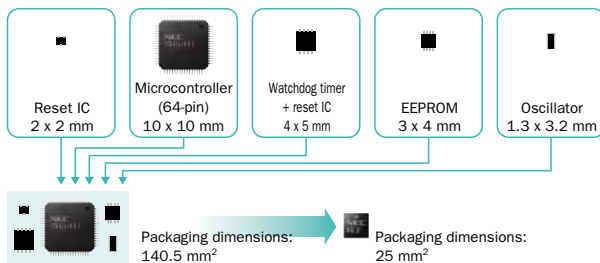
Smaller packages, embedded peripheral parts, and power-saving design enable development of smaller, more energy-efficient devices.

Comparison of operating currents (for 4 ports)

	Former product: UPD720112GK	ECOUSB™: UPD720114GA	% Reduction
			
Package size	Approx. 150 mm ³	Approx. 50 mm ³	67%
Full-speed mode (USB1.1)	52.3 mA	41 mA	22%
High-speed mode (USB2.0)	202 mA	149 mA	26%
Suspended state	920 μA	220 μA	76%

8-bit Microcontroller

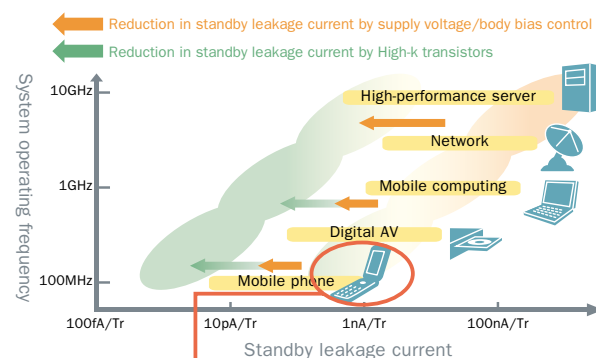
Integration of the microcontroller and four peripheral ICs on one chip enables reduction of device packaging dimensions.



New energy-saving technologies

Leading-edge electronic devices now under development faced the challenge of physical limitations resulting in greater standby leakage current. By modifying materials and circuit technology, we have developed new technologies that achieve a ninety-percent reduction in leakage current. The new technology will enable our customers to offer products with reduced standby power consumption and CO₂ emissions.

Examples of power consumption reduction

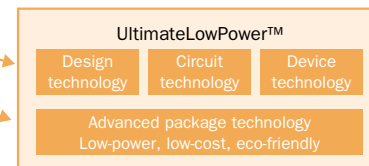
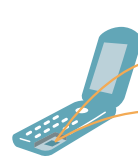


UltimateLowPower™

Brand new technologies enable LSIs with ultra-low power consumption

A synergy of device, circuit, and design technologies achieves power reduction in 65nm/55nm generation LSIs

- Ninety percent reduction in power consumed in standby mode by conventional mobile phones.
- New technologies reduce power consumption in products ranging from high-speed digital consumer applications to low-end applications.
- Ultra-low power consumption can be achieved with the same ease as conventional cell-based LSI design.



TALK about ECO — Our environmental efforts



Minoru Arakawa

NEC Micro Systems

It's our responsibility to develop semiconductor products that satisfy function and environment-response requirements.

The semiconductor products we develop need to meet the increasingly demanding requirements by our customers for high performance and also be eco-friendly and energy-efficient. The environmental impact of a semiconductor product resulting from the amount of energy it consumes is more or less determined at the design stage. We conduct tests and apply the results at each stage of design in the development process in order to build in both high performance and energy efficiency. We perceive our responsibility as developing semiconductor products that satisfy function and environment-response requirements so as to contribute to our customers' green product efforts, the prosperity of society, and conservation of Earth's environment.