

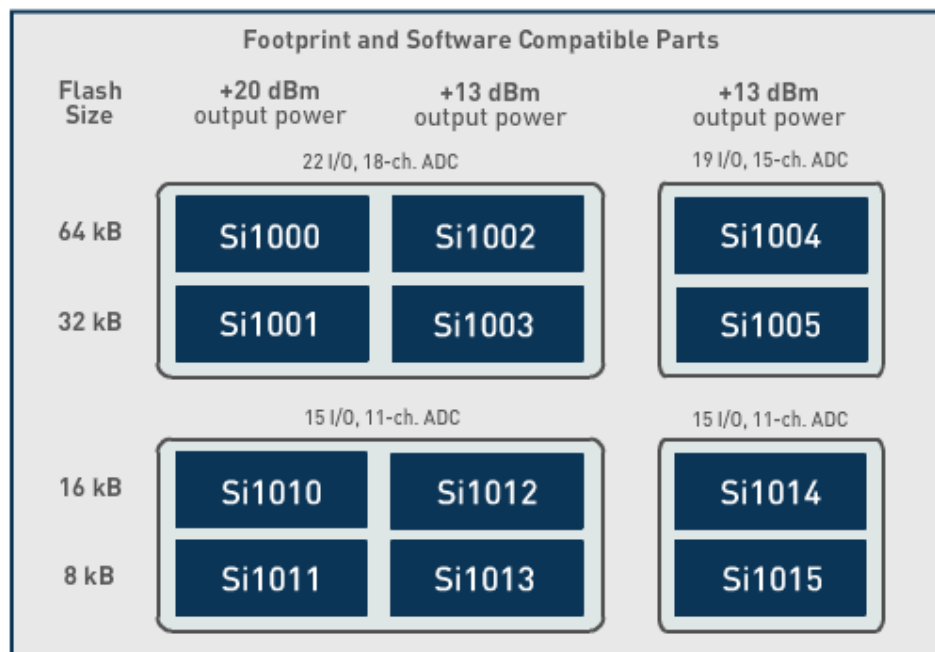
## Wireless MCUs

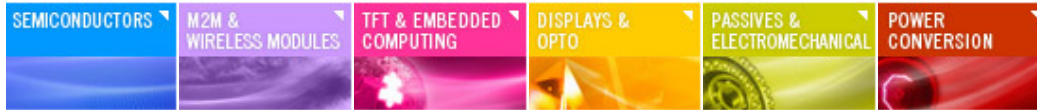
The Si100x/1x wireless MCU family is the industry's lowest power single-chip MCU with an integrated sub-GHz RF transceiver and designed to address the specific requirements of low power embedded systems requiring an RF bi-directional communication link:

- [Smart metering](#)
- In-home utility monitoring
- [Wireless security panels](#)
- Wireless sensors
- Home and building automation
- Access control

Having the lowest system power allows customers to achieve their design objectives, whether it be for longer battery life, higher product performance or lower system cost. The Si100x/1x wireless MCU family features the industry's lowest active mode current consumption, which saves power when the application is running. It also has the industry's lowest current consumption sleep modes that save power when the device is sleeping, which is typically the majority of time in most battery powered applications.

The family of devices is illustrated in the diagram below. The devices are footprint and software compatible. For more information on a specific device, click on the part number.

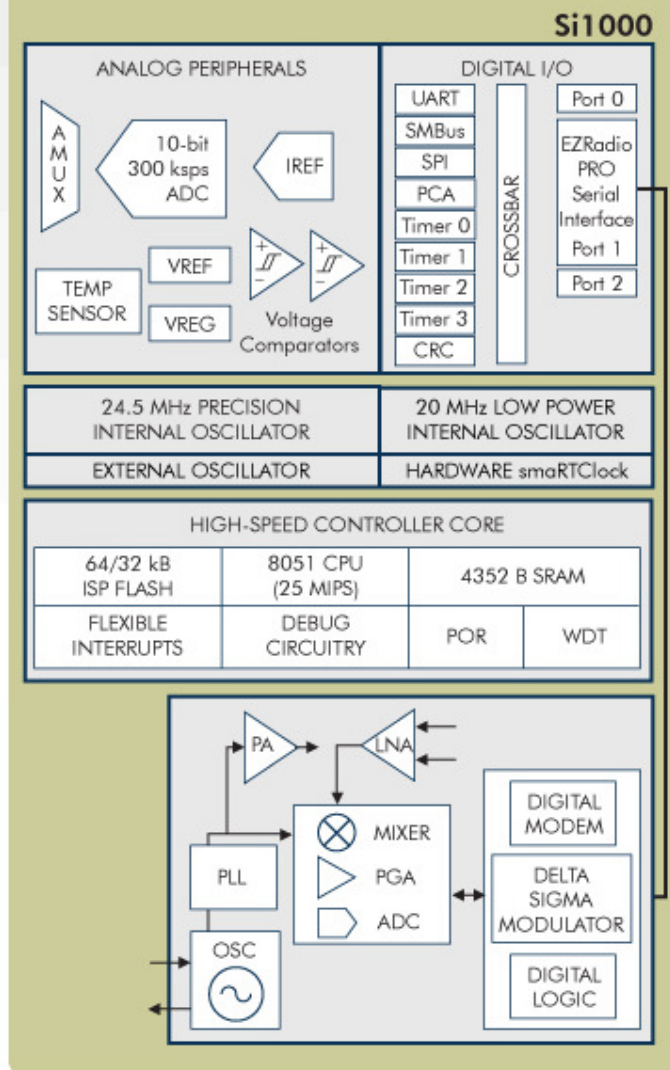


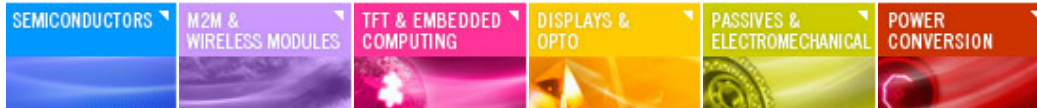


### Si100x Wireless MCUs

The Si100x wireless MCU family offers devices configured with either 64 K or 32 K of on-board Flash memory and a maximum transmit output power of +13 or +20 dBm. The Si1004 and Si1005 devices also include an integrated DC-DC boost converter with a switching efficiency of up to 90%, which can greatly increase system battery life. The specific device features are summarized in the product selection table below.

#### Block Diagram



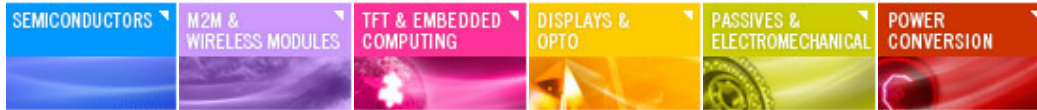


### Features

- Industry's lowest active & sleep currents
  - 160 uA / MHz - active mode
  - 10 nA sleep w/BOD disabled
  - 50 nA sleep w/BOD enabled
  - 300 nA sleep w/internal RTC
  - 600 nA sleep with external crystal
- LDO voltage regulator
- 2 uS wake
- 1.5 uS analog settling time
- 25 MH, single-cycle 8051 compatible CPU
- 12-bit ADC
- Up to 8 kB Flash, 512 bytes SRAM
- 0.9 V – 3.6 V operation

### Applications

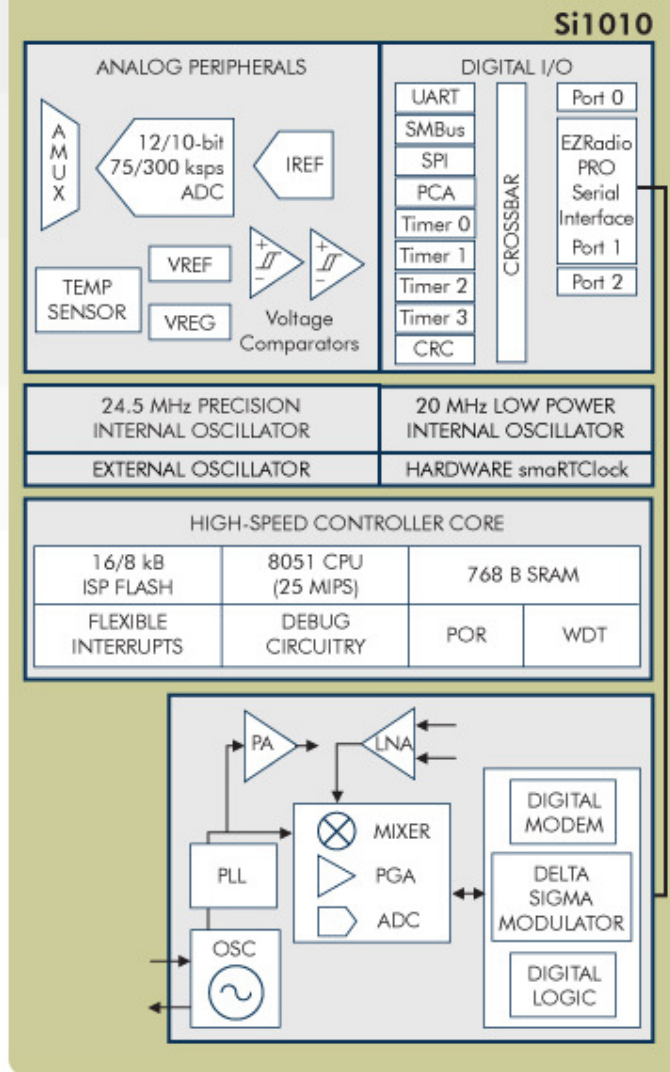
- RFID tags
- Water / gas meters
- Sensor interfaces
- Energy harvesting applications
- Alarm systems
- Smoke / fire detectors
- Portable health care products

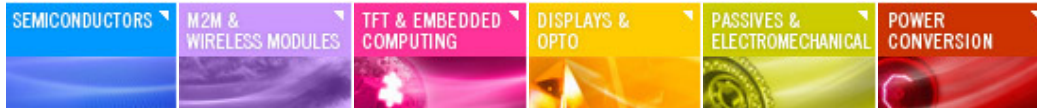


### Si101x Wireless MCUs

The Si101x wireless MCU family offers devices that are configured with either 16 K or 8 K of on-board Flash memory and a maximum transmit output power of +13 or +20 dBm. The Si1014 and Si1015 also include an integrated DC-DC boost converter with a switching efficiency of up to 90%, which can greatly increase system battery life. The specific device features are summarized in the product selection table below.

#### Block Diagram





### Features

- Industry's lowest active & sleep currents
  - 160  $\mu$ A / MHz - active mode
  - 10 nA sleep w/BOD disabled
  - 50 nA sleep w/BOD enabled
  - 300 nA sleep w/internal RTC
  - 600 nA sleep with external crystal
- LDO voltage regulator
- 2  $\mu$ S wake
- 1.5  $\mu$ S analog settling time
- 25 MHz, single-cycle 8051 compatible CPU
- 12-bit ADC
- Up to 8 kB Flash, 512 bytes SRAM
- 0.9 V – 3.6 V operation

### Applications

- RFID tags
- Water / gas meters
- Sensor interfaces
- Energy harvesting applications
- Alarm systems
- Smoke / fire detectors
- Portable health care products