

# P87LPC760/761

Philips 80C51-based low power, price, and pin count (14/16-pin) with 1 Kbyte/2 Kbyte OTP



## Description

The P87LPC760/761 are a 14/16-pin single-chip microcontrollers designed for low pin count applications demanding high-integration, low cost solutions over a wide range of performance requirements.

Being members of the Philips low pin count family, the P87LPC760 and P87LPC761 offer programmable oscillator configurations for high and low speed crystals or RC operation, wide operating voltage range, programmable port output configurations, selectable Schmitt trigger inputs, LED drive outputs, and a built-in watchdog timer.

The P87LPC760/761 is based on an accelerated 80C51 processor architecture that executes instructions at twice the rate of standard 80C51 devices.

## Features

- An accelerated 80C51 CPU provides instruction cycle times of 300-600 ns for all instructions except multiply and divide when executing at 20 MHz
- Execution at up to 20 MHz when  $V_{DD} = 4.5\text{ V to }6.0\text{ V}$ , 10 MHz when  $V_{DD} = 2.7\text{ V to }6.0\text{ V}$
- 2.7 V to 6.0 V operating range for digital functions
- 1 Kbyte/2 Kbyte EPROM code memory
- 128 byte RAM data memory

## Ordering information

Part Number	Temperature (C)	Description
P87LPC760BDH	0° to 70°	1 K, OTP, 20 MHz, 12 I/O pins, TSSOP package (16 pins)
P87LPC760BN	0° to 70°	1 K, OTP, 20 MHz, 12 I/O pins, DIP package (14 pins)
P87LPC761BDH	0° to 70°	2 K, OTP, 20 MHz, 14 I/O pins, TSSOP package (16 pins)
P87LPC761BN	0° to 70°	2 K, OTP, 20 MHz, 14 I/O pins, DIP package (14 pins)



- 32 byte customer code EPROM allows serialization of devices, storage of setup parameters, etc
- Two 16-bit counter/timers. One timer may be configured to toggle a port output upon timer overflow
- One/two analog comparator(s)
- Full duplex UART
- I<sup>2</sup>C communication port
- Four to six keypad interrupt inputs, plus one additional external interrupt input
- Four interrupt priority levels
- Watchdog timer with separate on-chip oscillator, requiring no external components. The watchdog timeout time is selectable from 8 values
- Active low reset. On-chip power-on reset allows operation without external reset components
- Low voltage reset. One of two preset low voltage levels may be selected to allow a graceful system shutdown when power fails. May optionally be configured as an interrupt
- Oscillator Fail Detect. The watchdog timer has a separate fully on-chip oscillator, allowing it to perform an oscillator fail-detect function
- Configurable on-chip oscillator with frequency range and RC oscillator options (selected by user programmed EPROM bits). The RC oscillator option allows operation without external oscillator components
- Programmable port output configuration options: quasi-bi-directional, open drain, push-pull, input-only
- Selectable Schmitt trigger port inputs
- LED drive capability (20 mA) on all port pins

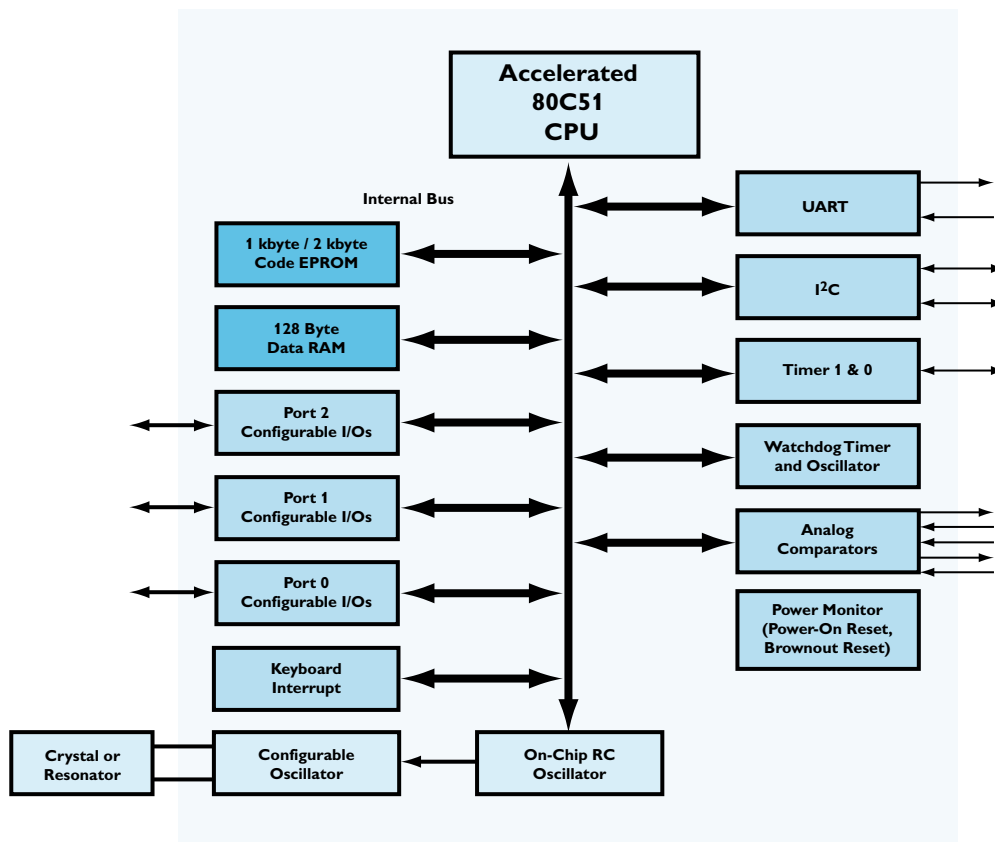
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P87LPC760 & P87LPC761 block diagram



[www.semiconductors.philips.com/microcontrollers](http://www.semiconductors.philips.com/microcontrollers)

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