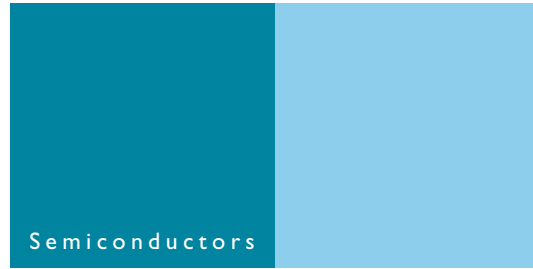


P87C66xX2



8-bit 80C51 16 KB OTP/ROM with 512 B RAM,
low voltage, low power, PCA and 400 KHz I²C



Features

- 80C51 Central Processing Unit
 - 16 KBytes OTP (P87C660X2, P87C661X2)
 - 16 KBytes ROM (P83C660X2, P83C661X2)
 - 512 bytes RAM
 - Low voltage (2.7V to 5.5V at 16 MHz) operation
- 12-clock operation with selectable 6-clock operation (via software, ISP, or parallel programmer)
- One 400 KHz byte oriented I²C interface in the P87C660X2 and two in the P87C661X2
- Programmable Counter Array (PCA)
 - PWM mode
 - Capture/Compare mode
- Memory addressing capability
 - Up to 64 Kbytes ROM and 64 Kbytes RAM
- Power control modes:
 - Clock can be stopped and resumed
 - Idle mode
 - Power-down mode
- Two speed ranges at V_{CC} = 5 V
 - 0 to 30 MHz in 6-clock operation mode
 - 0 to 33 MHz in 12-clock operation mode
- Dual Data Pointers
- Three security bits
- Four 8-bit I/O ports
- Watchdog timer

Benefits

- 400 KHz I²C supports multi-master communication at speeds up to 400 kb/s for easy interface with I²C peripherals
- 6-clock modes provides twice the performance of the conventional 80C51
- Fully static design allows a wide operating frequency range down to zero
- Allows private bus for Peripheral Management Controller

Description

The devices are Single-Chip 8-bit Microcontrollers manufactured in an advanced CMOS process and are derivatives in the 80C51 microcontroller family. The instruction set is 100% compatible with the 80C51 instruction set.

The P87C660X2 has a single 400 KHz I²C serial port and the P87C661X2 has a second 400 KHz I²C serial port. The second 400 KHz I²C serial port has dedicated open drain outputs.

These devices support 6-clock/12-clock mode by programming an OTP bit (OX2) using parallel programming. In addition, an SFR bit (X2) in the clock control register (CKCON) also selects between 6-clock/12-clock mode.

Applications

The added features of the P87C66xX2 make it a powerful microcontroller for applications that require pulse width modulation, high-speed I/O, I²C communication and up/down counting capabilities such as motor control.

The P87C66xX2 is suitable for a wide variety of applications that benefit from low EMI and the ability to easily add more peripherals like EEPROM, display drivers, A/D converters hardware monitors etc. via the I²C bus. It is also extremely well suited for Intelligent Platform Management (IPMI) applications in servers and high-end PCs where I²C serves as a physical protocol for the interface.

- Industrial Control
- Consumer Applications
- Peripheral Management Controller

P8x660X2 ordering information

Part Number	Temperature Range	Package	Drawing Number
P83C660X2FA	-40° C to +85° C	PLCC; 44 leads	SOT-187-2
P83C660X2BBD	0° to +70° C	LQFP; 44 leads	SOT-389-1
P87C660X2FA	-40° C to +85° C	PLCC; 44 leads	SOT-187-2
P87C660X2BBD	0° to +70° C	LQFP; 44 leads	SOT-389-1

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P87C661X2BBD	0° to +70° C	LQFP; 44 leads	SOT-389-1

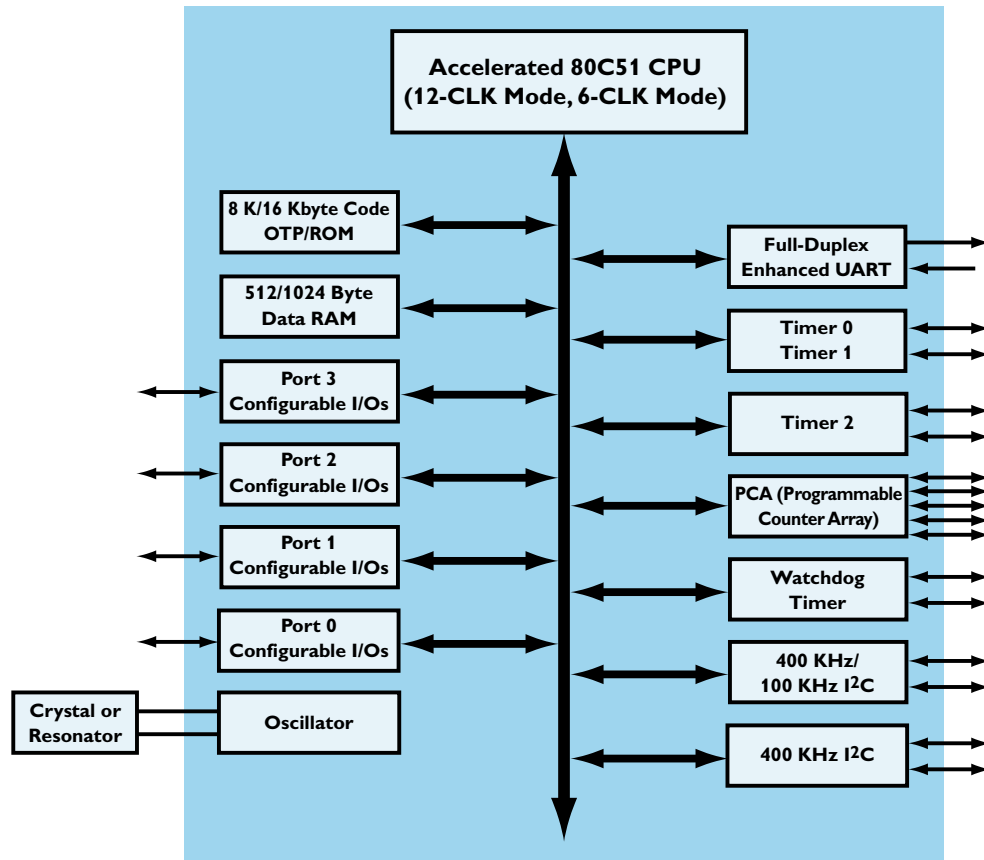
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P87C66xX2

8-bit 80C51 16 KB OTP/ROM with 512 B RAM, low voltage, low power, PCA and 400 KHz I²C



P87C66xX2 block diagram



Purchase of Philips I²C components conveys a license under the Philips' patent to use the components in the I²C system provided the system conforms to the I²C specification defined by Philips.

www.semiconductors.philips.com/microcontrollers



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Date of release: April 2003
document order number: 9397 750 11341

Published in U.S.A.