



87C51Mx2 Microcontroller

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P87C51Mx2 Microcontroller Family

	OTP	RAM
• P87C51MC2	96KB	3 KB
• P87C51MB2	64KB	2 KB

Available Now!

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Key P87C51Mx2 Benefits

- Increases program/data address range to 16 Mbytes (8 MB each)
- Enhances performance and efficiency for C programs
- Fully 80C51-compatible microcontroller
- Provides seamless, compelling upgrade path from classic 80C51
- Preserves 80c51 code base, investment/knowledge, and peripherals, ASICs
- Supported by 80C51 develop tools (Keil, Nohau, BP Micro, etc.)

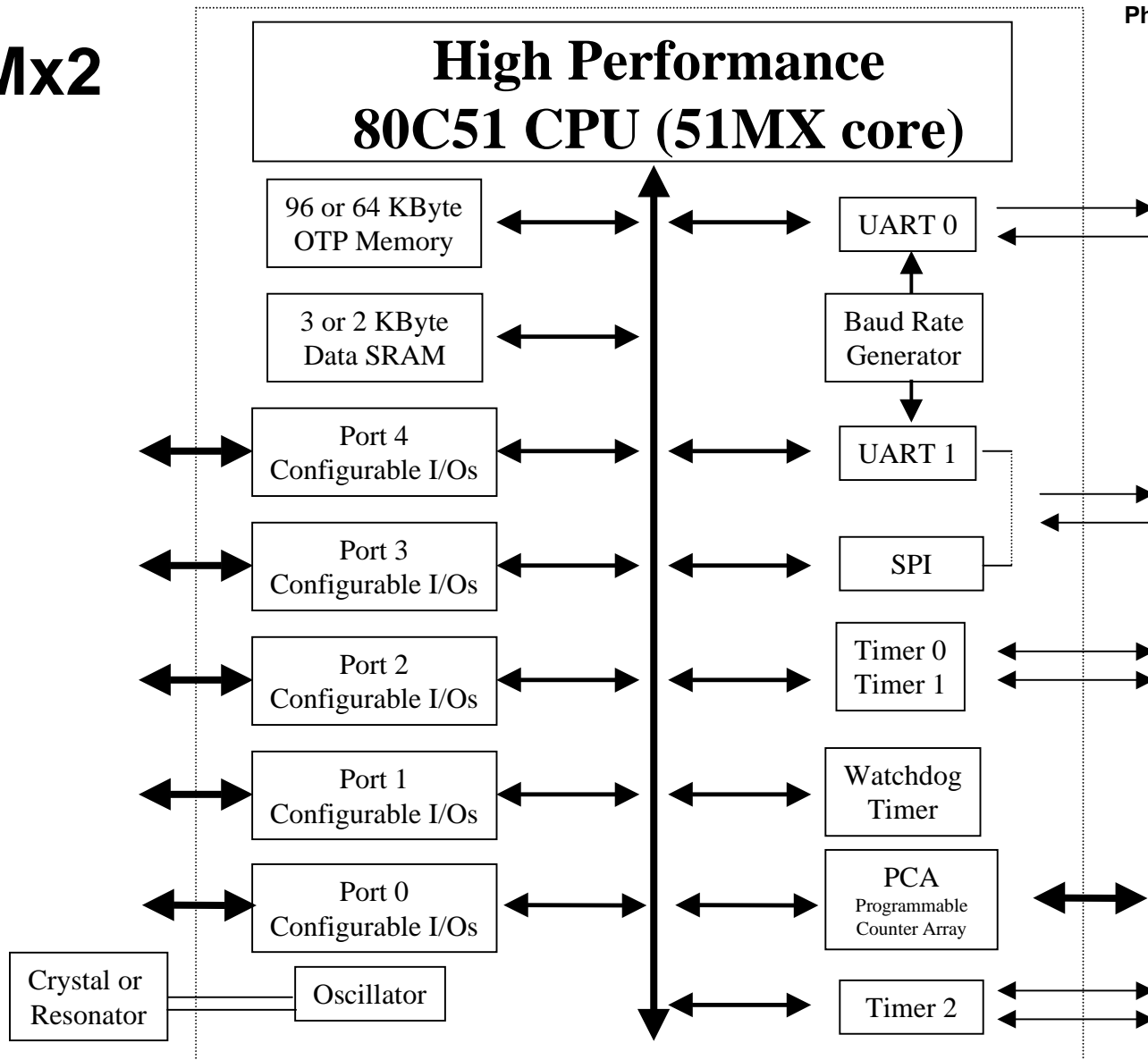
The P87C51Mx2 makes it possible to develop applications at a lower cost and with a reduced time-to-market.

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87C51Mx2



Key P87C51Mx2 Features

- 23-bit program memory space and 23-bit data memory space
- 96 or 64 Kbytes of on-chip OTP; 3 or 2 Kbytes of on-chip RAM
- Up to 24 MHz CPU clock with 6 clock cycles per machine cycle
- Programmable Counter Array (PCA) with five Capture/Compare modules
- Two full duplex enhanced UARTs with baud rate generator
- Industry-standard Serial Peripheral Interface (SPI) with a baud rate up to 6 Mbits/sec

Additional 87C51Mx2 Features

- Fully static
- Four-level interrupt priority
- 34 I/O lines (5 ports)
- Three Timers: Timer0, Timer1 and Timer2
- Framing error detection
- Automatic address recognition
- Low EMI (inhibit ALE)
- Second DPTR register
- Power control modes
- Idle mode
- Power down mode
- Clock can be stopped and resumed
- Asynchronous port reset
- Watchdog timer with programmable prescaler for different time ranges (compatible with 8xC66x with added prescaler)

87C51Mx2, When you need more memory ...

- Executes instructions at twice the rate of standard 80C51 devices.
- Linear, unsegmented, program and data addressing range of up to 16 Mbytes (8 each.) The program counter is expanded to 23 bits.
- The Stack Pointer is extended to 16 bits and the stack space may be expanded beyond the 80C51 limitation.
- A small number of instructions have extended addressing modes to allow full use of extended code and data addressing.
- A new 23-bit extended data pointer and two 24-bit universal Pointers greatly improve C Compiler code efficiency in using pointers to access variables in different spaces.

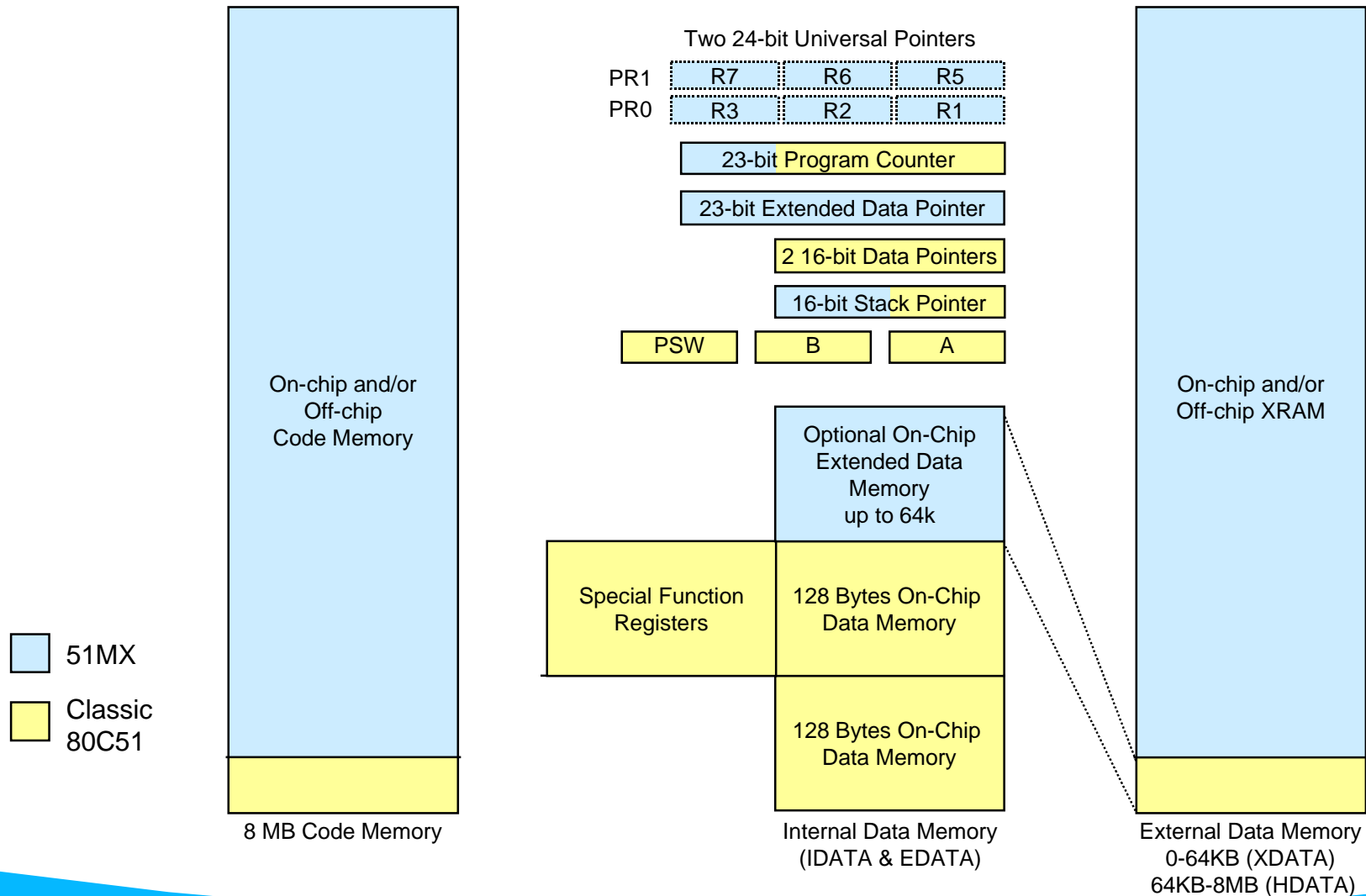
With its increased memory capabilities, the 51MX is able to seamlessly support today's complex C-based applications.

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51MX Programmer's Model & Memory Map



Focus on existing 80C51 applications

- **100% Binary Compatible with the standard 80C51.**
- **Re-use of existing 80C51 code and knowledge for new designs.**
- **Allows use of existing development tools and vendors.**
- **Retains 80C51 Bus Compatibility to allow re-use of 80C51-based peripherals and ASICs.**

Seamless and Compelling Upgrade path from the 80C51 for existing 80C51 users.

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87C51Mx2 Development Tool Support

- **Compilers**

Keil - Apr 9

- **Dev. Boards**

Phytec - May 14

- **Emulators**

Nohau - Apr 10

- **Programmers**

BP Micro - Apr 9

Most 80C51 development tools will be supported - TBD

April 2, 2001

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87C51Mx2 Sales Support

- **Datasheet**
 - Available on the WWW
- **User Manual**
 - Due April 27th
- **Architecture Reference**
 - Due May 25th
- **Samples**
 - Due April 16
- **Factsheet**
 - Available on the WWW or
 - Order # 9397-750-08145
- **Tools Support**
 - Updated on the WWW

www.PhilipsMCU.com/51MX

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