

## PRELIMINARY

January 1991

## 8-Bit Microcontroller

### Hardware Features

- Standard 8-bit Architecture
- On Chip Memory
  - ▶ ROM ..... 3,866 bytes
  - ▶ RAM ..... 192 bytes
- Two 8-Bit Pulse Width Modulators
- 24 Bidirectional I/O Lines
  - ▶ 8 with Data Transfer Handshaking
  - ▶ 4 Interruptable Inputs
- Synchronous Serial Port (SPI)
- Programmable 8-Bit Timer with 7-Bit Prescaler
- Computer Operating Properly (COP) Circuitry
  - ▶ Watchdog Timer
  - ▶ Slow Clock Detect
  - ▶ Illegal Opcode Trap
- HCMOS Technology
- Fully Static with Power Saving WAIT, STOP, and Data Retention Modes
- Supplied in 40 Pin DIP or 44 Pin PLCC & QFP Packages
- Operating Range ..... -40°C to +125°C
- Operation ..... +3V to +5.5V
- Data Retention ..... 2V

### Software Features

- Supports Full CDP68HC05 Instruction Set
  - ▶ 8x8 Multiply
  - ▶ Bit Set, Clear, and Test

### Description

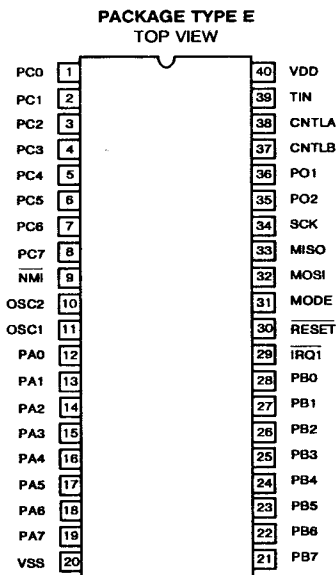
The CDP68HC05W4 is a member of the Harris CDP68HC05 family of 8-bit, HCMOS microcontrollers. This single chip microcontroller contains 3,866 bytes of masked ROM, 192 bytes of RAM, two pulse width modulators, an 8-bit timer, a synchronous serial (SPI) port, 24 bidirectional I/Os (8 with data transfer handshaking), six external interrupts, a computer operating properly (COP) circuitry, an on chip oscillator, and a built in prototyping mode. The PWMs can be used as 8-bit D to A converters, speed controllers, or tone generators. The timer with 7-bit prescaler can be used for pulse width measurements, timing, or event counting. Interfacing to external serial peripherals is easy with the SPI port. The interruptable VPORT C can be used for switch scanning or to exit the power down modes. The COP circuitry provides a level of failsafe system security.

The CDP68HC05W4 supports the full CDP68HC05 instruction set. Development can be performed with tools supplied by Harris or offered by numerous third party vendors. Available tools include assemblers, C compilers, and ICE systems. The prototyping mode facilitates bread-boarding.

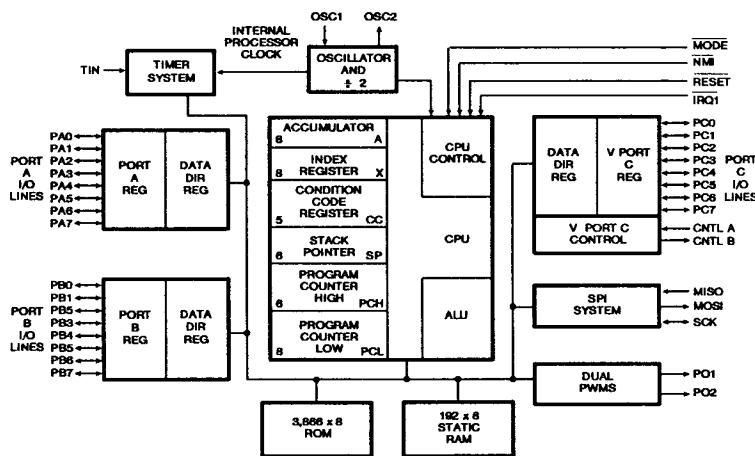
The CDP68HC05W4 is supplied in a 40 lead dual-in-line plastic package (E suffix), a 44 lead plastic leaded chip carrier (N suffix), and a 44 lead metric quad flatpack (Q suffix).

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MICROCONTROLLERS

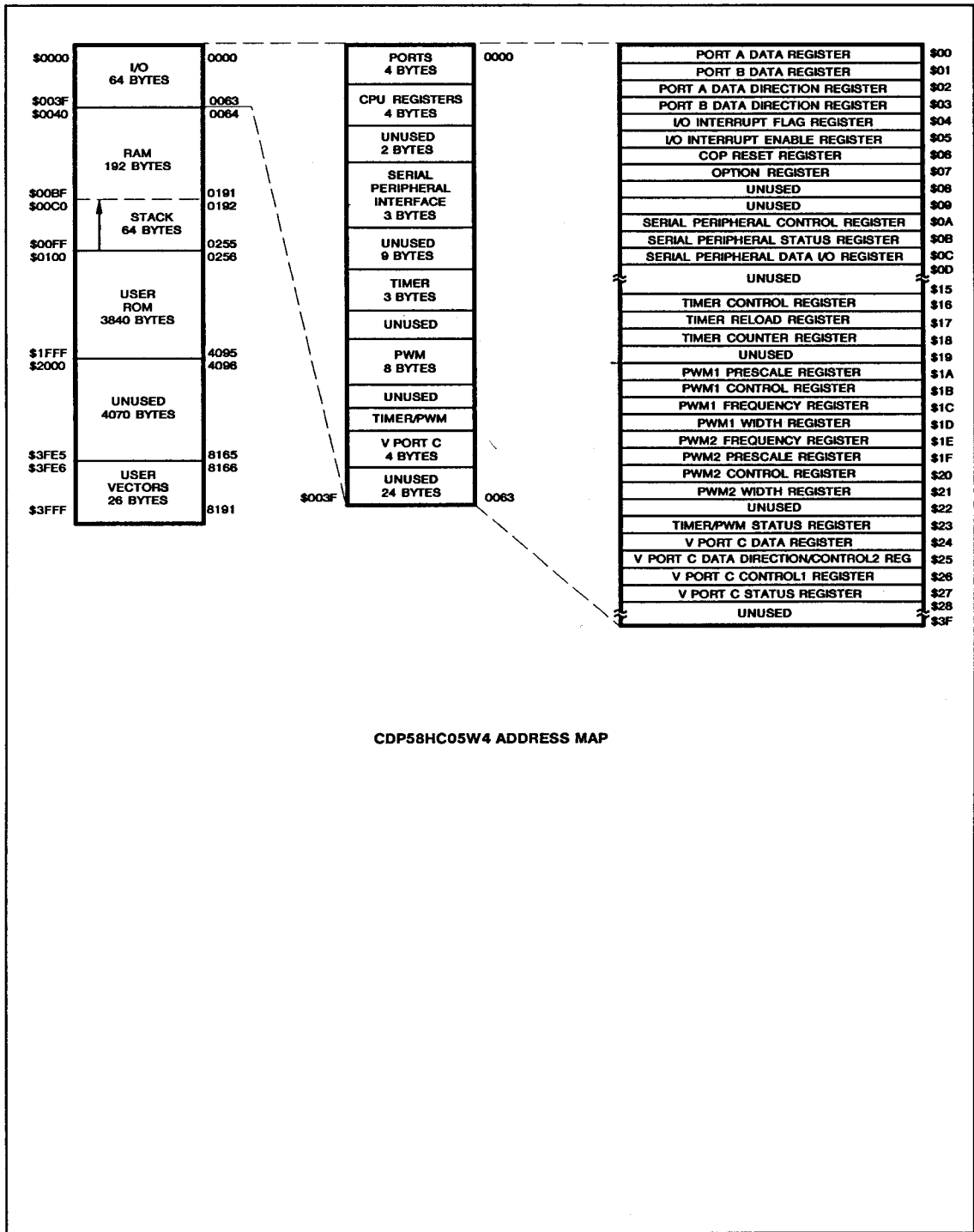
### Pinout



### Block Diagram



CDP68HC05W4



CDP58HC05W4 ADDRESS MAP