

The 8-Bit COP800 Family: Optimized for Value

National's COP800 family provides cost-effective solutions for feature-rich, 8-bit microcontroller applications.

Key Features

- High-performance 8-bit microcontroller
- Full 8-bit architecture and implementation
- 1 μ s instruction-cycle time
- High code efficiency with single-byte, multiple-function instructions
- UART
- A/D converter
- WATCHDOG™/clock monitor
- Brown Out Detect
- On-chip ROM from 1 kbyte
- On-chip RAM to 192 bytes
- EEPROM
- M²CMOS™ fabrication
- MICROWIRE/PLUS™ serial interface
- ROMless versions available
- Wide operating voltage range: +2.5V to +6V
- Military temp range available: -55°C to +125°C
- MIL-STD-883C versions available
- 20- to 44-pin packages

The COP800 combines a powerful single-byte, multiple-function instruction set with a memory-mapped core architecture similar to the HPC™.

And like the HPC, the COP800 family supports a wide variety of ROM, RAM, I/O and peripheral functions.

The COP800 has an instruction-cycle time of only 1 μ s, and because over 70% of its instruction set is composed of single-cycle, single-byte instructions, the COP800 can deliver exceptional performance for an 8-bit engine.

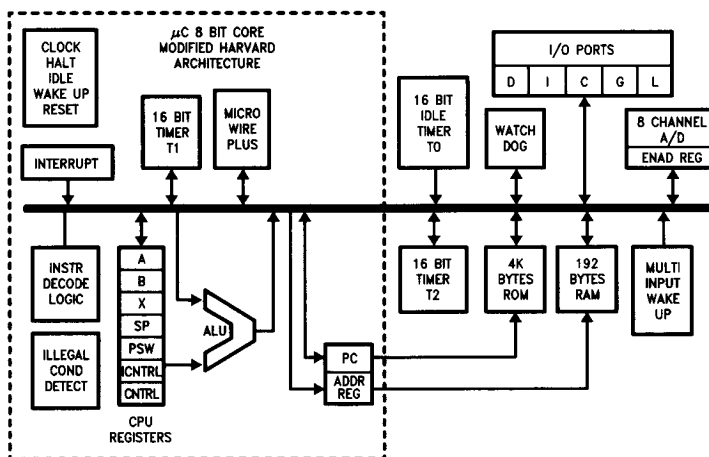
And since it's fabricated in National's advanced M²CMOS process, the COP800 has low current drain, low heat dissipation, and a wide operating voltage range.

Key Applications

- Automotive systems
- Process control
- Robotics
- Telecommunications
- AC-motor control
- DC-motor control
- Keyboard controllers
- Modems
- RS232C controllers

The COP800 family offers high performance in a low-cost, easy-to-design-in package.

COP888CF Block Diagram



TL/XX/0073-3

COP800 Family of Microcontrollers

Features												
Commercial Temp Version 0°C to +70°C	Industrial Temp Version -40°C to +85°C	Military Temp Version -55°C to +125°C	Memory		I/O			Interrupt	Stack	Timer Base Counters	Size (Pls)	Other
			ROM (Bytes)	RAM (Bytes)	I/O Pls	Serial I/O						
COP920C COP922C	COP820C COP822C	COP620C COP622C	1.0k 1.0k	64 64	24 16	Yes Yes	3 Sources 3 Sources	EEPROM EEPROM	1 1	28 20		
	COP820CJ COP822CJ COP823CJ		1.0k 1.0k 1.0k	64 64 64	24 16 12	Yes Yes No	3 Sources 3 Sources 3 Sources	In RAM In RAM In RAM	3 3 3	28 20 16	Brown Out, MIWL, & Comp	
	COP8640 COP8642 COP8620 COP8622		2.0k 2.0k 1.0k 1.0k	64 64 64 64	24 16 24 16	Yes Yes Yes Yes	3 Sources 3 Sources 3 Sources 3 Sources	In RAM In RAM In RAM In RAM	1 1 1 1	28 20 28 20	64 x 8 EEPROM 64 x 8 EEPROM	
COP980C COP981C	COP880C COP881C		4k 4k	128 128	36 24	Yes Yes	3 Sources	In RAM	1	40/44 28		
COP940C COP942C	COP840C COP842C	COP640C COP642C	2.0k 2.0k	128 128	24 16	Yes Yes	3 Sources 3 Sources	In RAM In RAM	1 1	28 20		
	COP8780C COP8781C COP8782C		4.0k 4.0k 4.0k	64 or 128 64 or 128	36 24 16	Yes Yes Yes	3 Sources 3 Sources 3 Sources	In RAM In RAM In RAM	1 1 1	40/44 28 20	OTP or UV Erasable	
	COP884CF COP884CG COP884EG COP884CS COP884CL	COP684CF COP684CG COP684EG COP684CS COP684CL	4.0k 4.0k 8.0k 4.0k 4.0k	128 192 256 192 128	21 23 23 23 23	Yes Yes Yes Yes Yes	10 Sources 14 Sources 14 Sources 10 Sources 10 Sources	In RAM In RAM In RAM In RAM In RAM	2 3 3 1 2	28 28 28 28 28	2 PWM & A/D 3 PWM & UART 3 PWM & UART 3 PWM & UART 2 PWM	
	COP888CF COP888CG COP888EG COP888CS COP888CL	COP688CF COP688CG COP688EG COP688CS COP688CL	4.0k 4.0k 8.0k 4.0k 4.0k	128 192 256 192 128	33/37 35/39 35/39 35/39 33/39	Yes Yes Yes Yes Yes	10 Sources 14 Sources 14 Sources 10 Sources 10 Sources	In RAM In RAM In RAM In RAM In RAM	2 3 3 1 2	40/44 40/44 40/44 40/44 40/44	2 PWM & A/D 3 PWM & UART 3 PWM & UART 1 PWM & UART 2 PWM	