

COP2404 ROMless Dual CPU Microcontrollers

General Description

The COP2404 ROMless Dual CPU microcontrollers are members of the COPS™ family, fabricated using N-channel, silicon gate MOS technology. Each microcontroller contains two identical CPUs with all system timing, internal logic, RAM and I/O necessary to implement dedicated control functions in a variety of applications, and are identical to COP2440/COP2340 devices, except that the ROM has been removed; pins have been added to output the ROM address and to input ROM data. In a system, the COP2404 will perform exactly as the COP2440; this important benefit facilitates development and debug of a COP2440 program prior to masking the final part. Features include single supply operation, various output configurations, and an instruction set, internal architecture, and I/O scheme designed to facilitate keyboard input, display output and data manipulation. Standard test procedures and reliable high-density fabrication techniques provide the medium to large volume customers with a dual CPU microcontroller at a low end-product cost.

These microcontrollers are appropriate choices in many demanding control environments, especially those with human interface. Further, the high throughput and MICROBUS™ I/O facilitate numerous machine interface applications. The two CPUs provide on one chip the ability to handle two simultaneous but totally independent real time events.

Extended temperature range (-40°C to +85°C) COP2304, available as special order.

Features

- Exact circuit equivalent of COP2440
- Standard 48-pin dual-in-line package
- Interfaces with standard PROM or ROM
- Two independent processors
- Dual CPU simplifies task partitioning — easy to program
- Enhanced, more powerful instruction set
- 160 × 4 RAM, addresses up to 2k × 8 ROM
- MICROBUS compatible
- Zero-crossing detect circuitry
- True multi-vectored interrupt from 4 selectable sources (plus restart)
- Four-level subroutine stack for each processor (in RAM)
- 4 μs execution time per processor (non-overlapping)
- Single supply operation (4.5V–6.3V)
- Programmable time-base counter for real-time processing
- Internal binary counter/register with MICROWIRE™ compatible serial I/O
- General purpose and TRI-STATE® outputs
- Software/hardware compatible with other members of COP400 family
- Compatible single-processor device available

Block Diagram

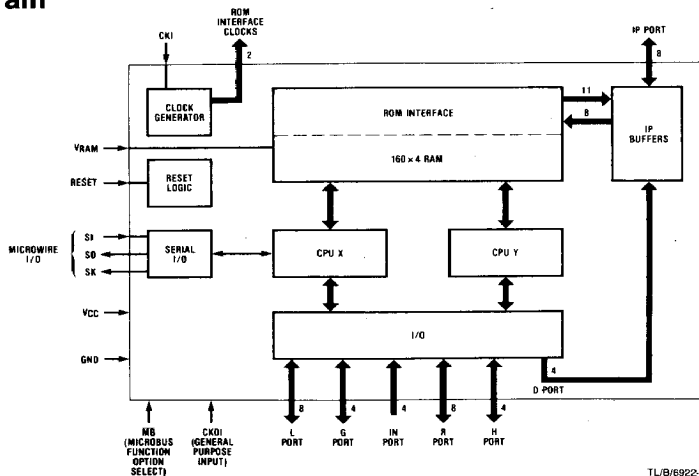


FIGURE 1

Order Number COP2404N,
NS Package N40A