

MULTI PROCESSOR CONFIGURATIONS

3.1 MULTIPROCESSOR SYSTEMS

Multiprocessor Systems refer to the use of multiple processors that execute instructions simultaneously and communicate using mailboxes and semaphores

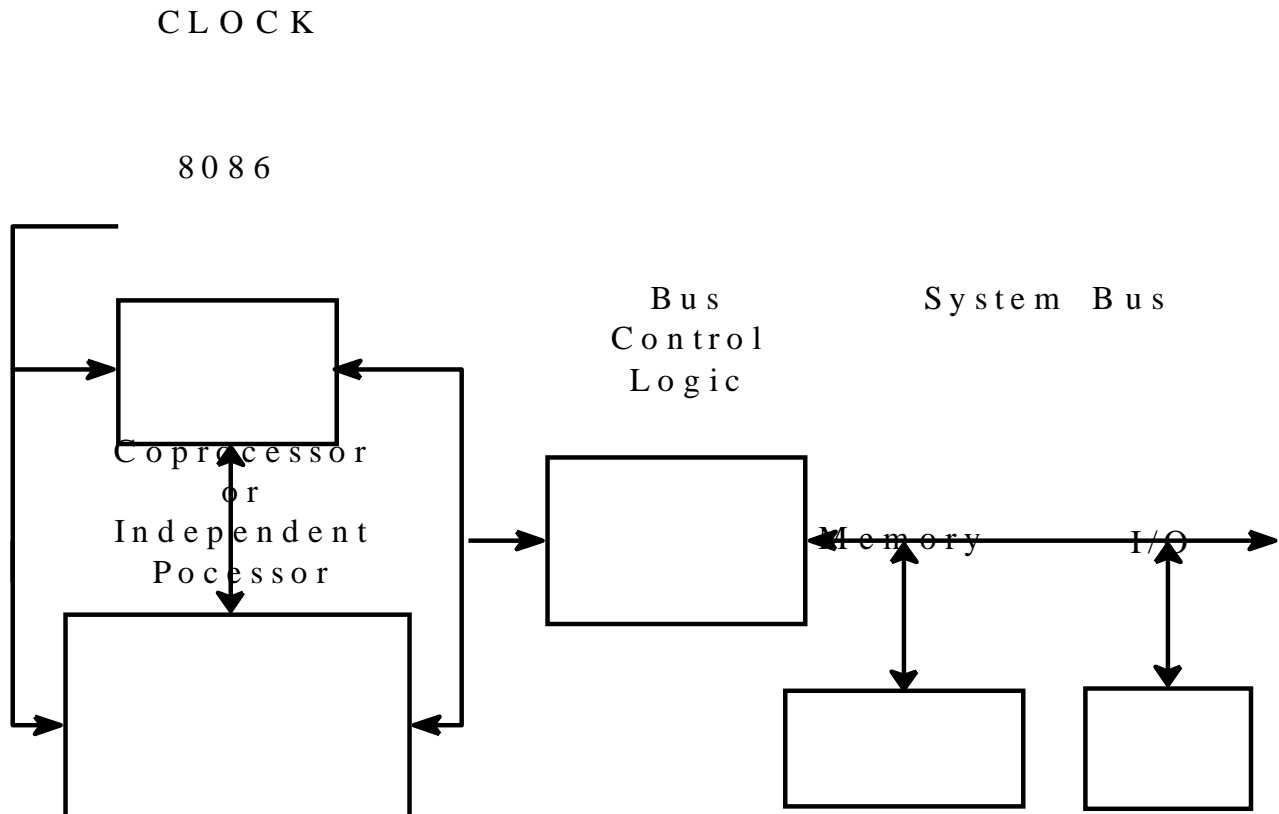
Maximum mode of 8086 is designed to implement 3 basic multiprocessor configurations:

1. coprocessor (8087)
2. closely coupled (8089)
3. loosely coupled (Multibus)

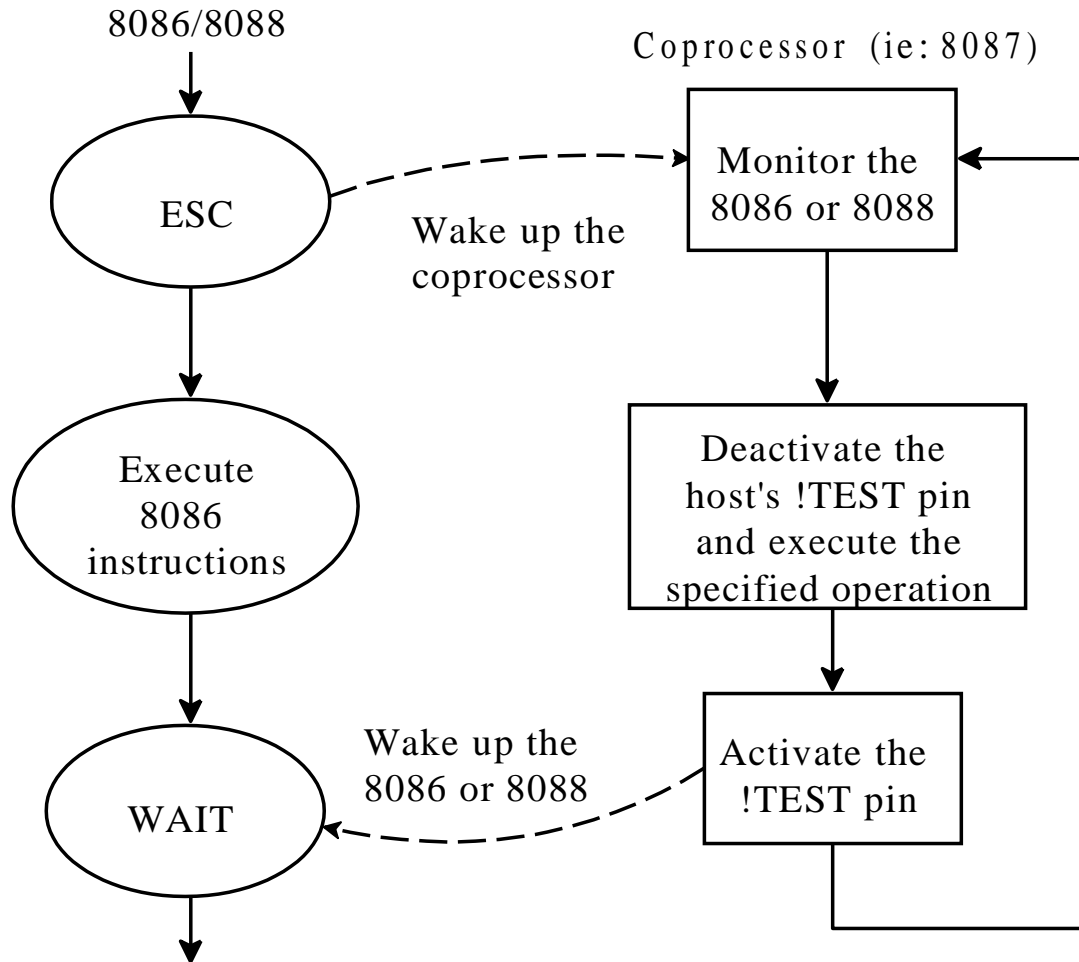
Coprocessors and closely coupled configurations are similar in that both the CPU and the external processor share:

- Memory
- I/O system
- Bus & bus control logic
- Clock generator

3.2 Closely Coupled Configuration:



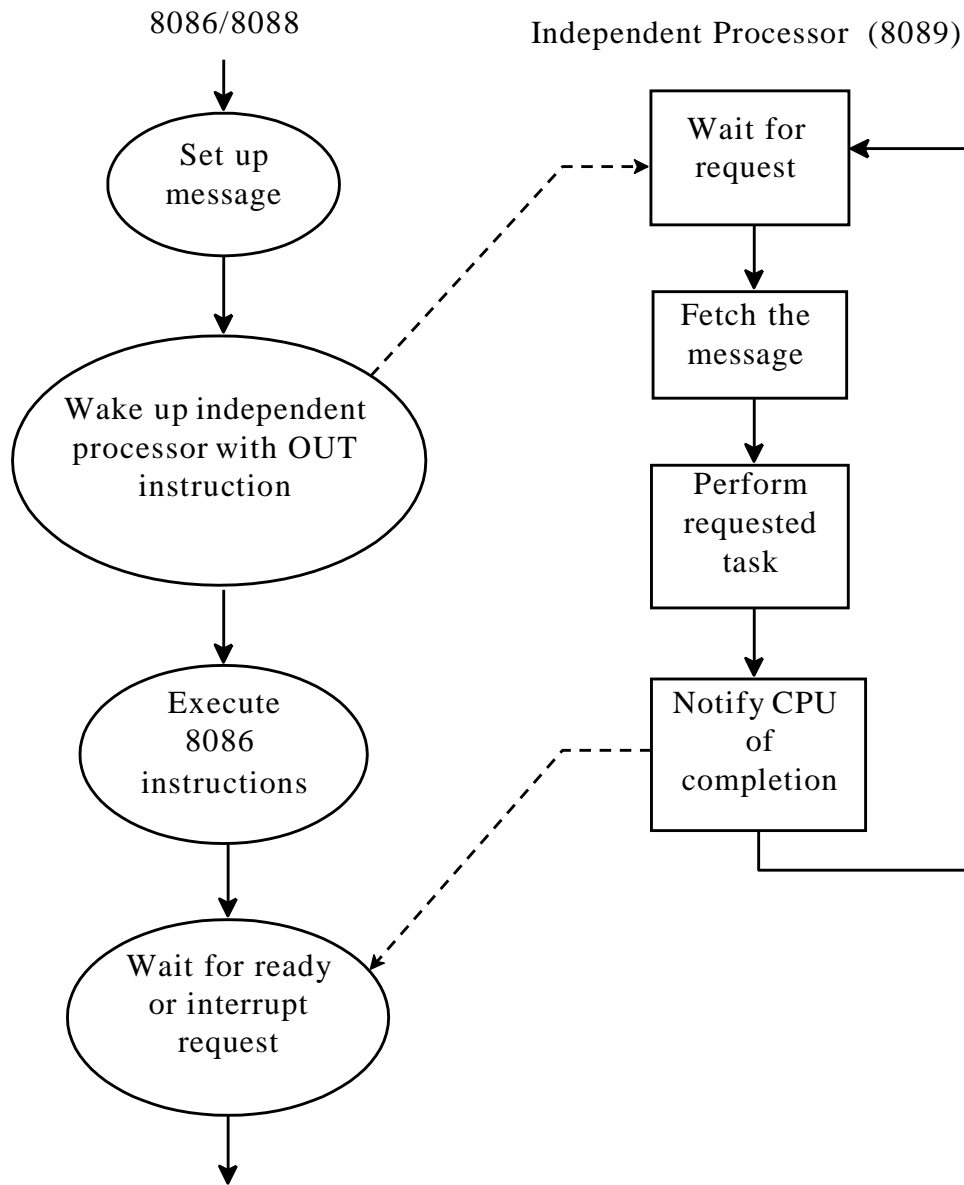
Example: 8086/8087



Coprocessor cannot take control of the bus, it does everything through the CPU

- 8089 shares CPU's clock and bus control logic
- communication with host CPU is by way of shared memory
- host sets up a message (command) in memory
- independent processor interrupts host on completion

NOTE: Closely Coupled processor may take control of the bus independently Two 8086's cannot be closely coupled



Source : <http://nprcet.org/e%20content/Misc/e-Learning/IT/IV%20Sem/CS%202252-Microprocessors%20and%20Microcontrollers.pdf>