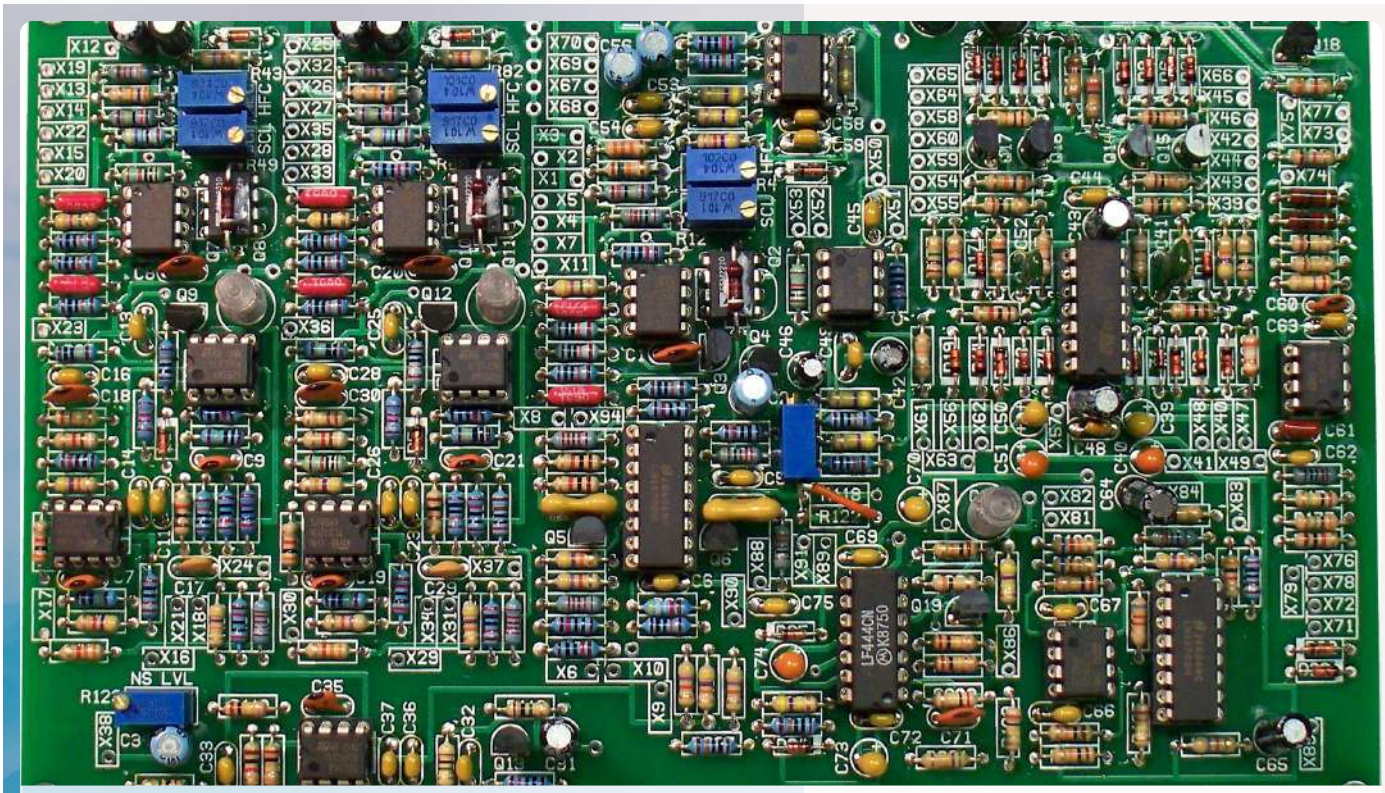


Interrupts and types of interrupts in 8086/8088

Discover the fascinating world of interrupts in the 8086/8088 microprocessors. Learn about the different types of interrupts and their significance.

by Kawaljeet Kaur
Last edited less than a minute ago

Introduction to Interrupts

1 Definition

Understand the fundamental concept of interrupts and how they enhance the functionality of the 8086/8088 processors.

2 Triggering Mechanism

Explore how interrupts are triggered and the mechanisms underlying the process.

3 Benefits

Learn the advantages of using interrupts in real-time systems and multitasking environments.

Different Types of Interrupts

Maskable Interrupts

Discover interrupts that can be enabled or disabled by software and their significance in system control.

Non-Maskable Interrupts

Explore interrupts that cannot be disabled and their role in critical system events and error handling.

Hardware Interrupts

Learn about interrupts triggered by external hardware devices and their integration into system functionality.

Software Interrupts

Understand how software instructions can trigger interrupts, allowing communication between programs and the operating system.

Interrupt Service Routine (ISR)

Delve into the crucial role of the Interrupt Service Routine (ISR) in managing interrupts, handling requests, and resuming interrupted processes.

Real-Life Applications

Telecommunication Systems

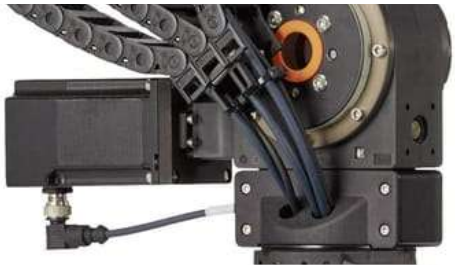
Explore how interrupts are utilized in satellite communication systems to handle real-time data transmission and signal processing.

Medical Equipment

Learn how interrupts are utilized in medical equipment to ensure prompt response times and accurate data monitoring.

Traffic Light Control

Discover how interrupts play a critical role in managing traffic light systems, optimizing traffic flow, and ensuring pedestrian safety.



Industrial Automation

Understand how interrupts enable precise control and synchronization of robotic arms in industrial automation processes.

Interrupt Prioritization

1

Priority Levels

Explore how interrupts are organized into priority levels, ensuring the execution of critical tasks first.

2

Daisy Chaining

Learn about interrupt daisy chaining and how it allows for efficient handling of multiple interrupts.

3

Interrupt Masks

Discover how interrupt masks are implemented to selectively enable or disable specific interrupt sources.

Interrupt Handling Techniques

1 Bottom-Half Processing

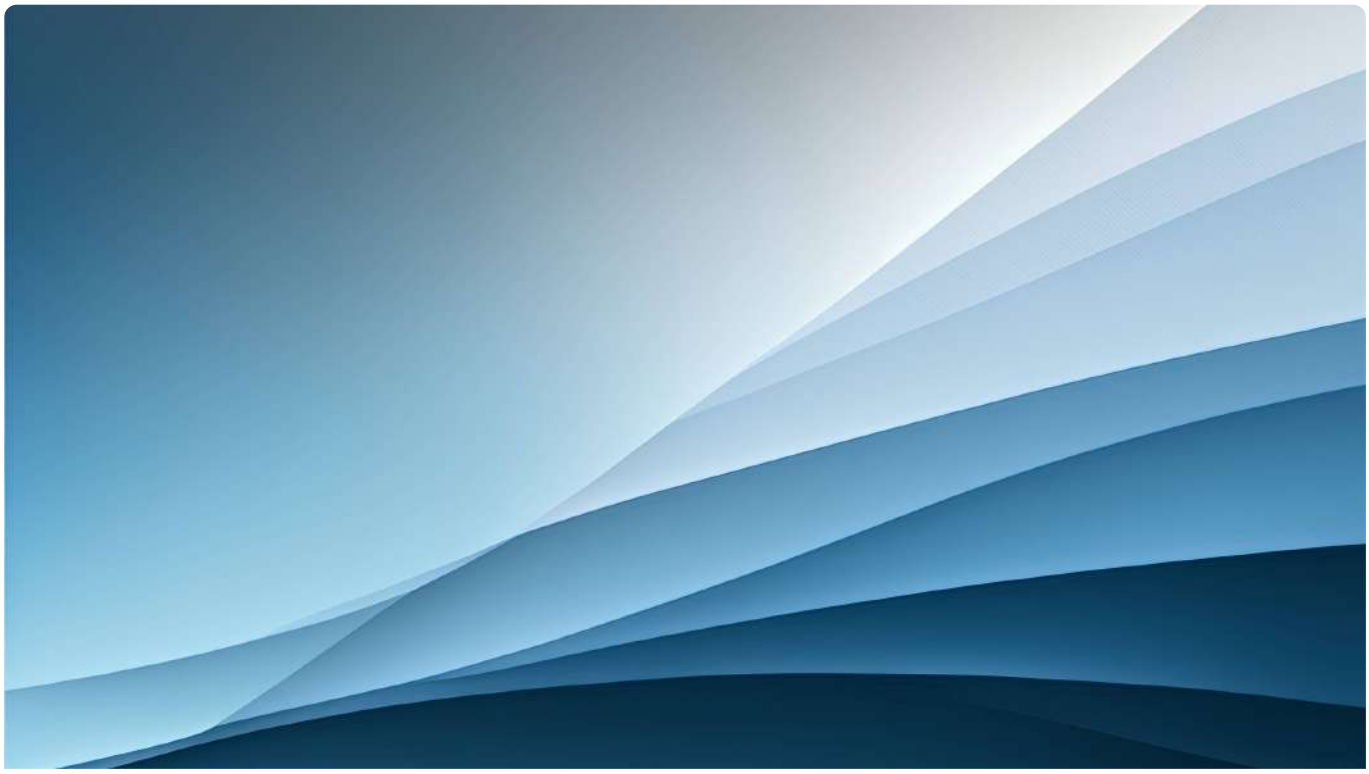
Explore techniques used to defer less time-critical interrupt handling tasks to optimize system performance.

2 Priority Inversion

Understand the challenges posed by priority inversion and techniques to mitigate its impact on interrupt handling.

3 Interrupt Coalescing

Discover methods to combine multiple interrupts into a single interrupt event, minimizing system overhead.



Summary and Conclusion

Recap the key learnings about interrupts in the 8086/8088 microprocessors and their importance in various applications.

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