

## DIRECT MEMMORY ACCESS IN INTEL 8085

The Intel 8085 microprocessor does support Direct Memory Access (DMA) with a specific process. Here is an overview of the DMA process in the Intel 8085:

1. **DMA Request:** A DMA request signal is generated by a peripheral device, indicating that it needs to transfer data directly to or from memory.
2. **DMA Acknowledge:** The DMA request is received by a DMA controller or a dedicated DMA chip. The DMA controller acknowledges the request and prepares for the data transfer.
3. **CPU Handshake:** The DMA controller sends a request to the CPU to gain control of the system buses (address bus, data bus, and control signals) for the data transfer. This request is typically done using the HOLD signal.
4. **CPU Response:** Upon receiving the HOLD request, the CPU completes its current instruction and sends a response using the HLDA (HOLD Acknowledge) signal to acknowledge the DMA controller's request.
5. **Bus Control:** The DMA controller takes control of the system buses by releasing the HLDA signal and activating its own control signals. This allows the DMA controller to communicate directly with the memory and the peripheral device.
6. **Address Setup:** The DMA controller sets up the memory address for the data transfer by placing the appropriate address on the address bus.
7. **Data Transfer:** The DMA controller transfers the data between the peripheral device and memory by utilizing the data bus. It can read or write data directly to or from memory without the involvement of the CPU.
8. **Transfer Completion:** Once the data transfer is complete, the DMA controller may generate an interrupt to inform the CPU about the transfer status or signal the end of the DMA operation.
9. **CPU Regains Control:** After the data transfer, the DMA controller releases control of the system buses by activating the HLDA signal again.
10. **CPU Execution:** The CPU resumes its normal execution, and if an interrupt was generated by the DMA controller, it can handle it accordingly.

It's important to note that DMA operations on the Intel 8085 typically require external hardware, such as a DMA controller or a dedicated DMA chip, to facilitate the data transfer. The microprocessor itself provides the necessary control signals (HOLD and HLDA) to enable DMA, but the specific implementation details may vary depending on the DMA controller or chip used.