



## 8294A DATA ENCRYPTION/DECRYPTION UNIT

- Certified by National Bureau of Standards
- 400 Byte/Sec Data Conversion Rate
- 64-Bit Data Encryption Using 56-Bit Key
- DMA Interface
- 3 Interrupt Outputs to Aid in Loading and Unloading Data
- 7-Bit User Output Port
- Single 5V ± 10% Power Supply
- Fully Compatible with iAPX-86, 88, MCS-85, MCS-80, MCS-51, and MCS-48 Processors
- Implements Federal Information Processing Data Encryption Standard
- Encrypt and Decrypt Modes Available

The Intel 8294A Data Encryption Unit (DEU) is a microprocessor peripheral device designed to encrypt and decrypt 64-bit blocks of data using the algorithm specified in the Federal Information Processing Data Encryption Standard. The DEU operates on 64-bit text words using a 56-bit user-specified key to produce 64-bit cipher words. The operation is reversible: if the cipher word is operated upon, the original text word is produced. The algorithm itself is permanently contained in the 8294A; however, the 56-bit key is user-defined and may be changed at any time.

The 56-bit key and 64-bit message data are transferred to and from the 8294A in 8-bit bytes by way of the system data bus. A DMA interface and three interrupt outputs are available to minimize software overhead associated with data transfer. Also, by using the DMA interface two or more DEUs may be operated in parallel to achieve effective system conversion rates which are virtually any multiple of 400 bytes/second. The 8294A also has a 7-bit TTL compatible output port for user-specified functions.

Because the 8294A implements the NBS encryption algorithm it can be used in a variety of Electronic Funds Transfer applications as well as other electronic banking and data handling applications where data must be encrypted.

3

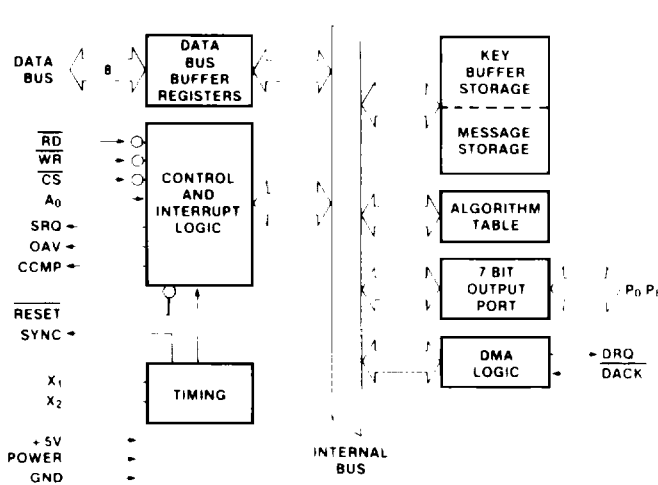


Figure 1. Block Diagram

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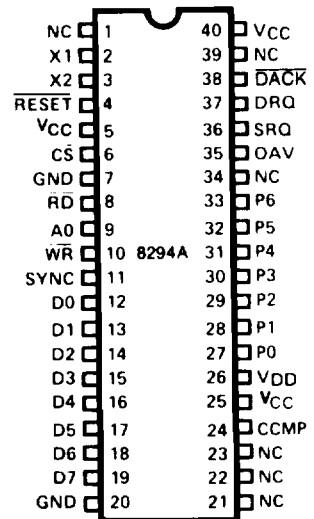


Figure 2. Pin Configuration

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The complete document for this product is available on Intel's "Data-on-Demand" CD-ROM product. Contact your local Intel field sales office, Intel technical distributor, or call 1-800-548-4725.

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