

Motorola NetRAMs

Networking Dual-Ported Memory for the Communications Market

Motorola's NetRAM devices are designed to meet an optimal price and performance point for dual-port applications. These devices enable data to flow quickly so Local Area Network (LAN) and Wide Area Network (WAN) devices can devote more of their resources to application performance

Product Description

The NetRAM family is offered in 1, 4, and 8 Mb densities. The NetRAM allows the user to concurrently perform reads or writes in combination on the two data ports. The two address ports determine the read or write locations for their respective data ports.

The synchronous design allows for precise control with the use of a single external clock. Chip enables, addresses, input data, and write enables for each port are registered on the rising edge of the clock. The output enable for each port is asynchronous in nature.

For the case when the addresses for each port are the same, certain protocols are followed. If both ports are read, the reads occur normally. If one port is writing and the other is being read, the read from the array will occur before the new data is written. If both ports are writing, only the data from Port-Y will be written to the array.

Functional additions have been made to successive generations of the NetRAM to allow the user more flexibility in design. The 4 Mb device offers two chip enables for each port over the single pair of chip enables for each 1 Mb device. The 8 Mb NetRAM adds a third chip enable per port and byte write capability.

Product Highlights

- Single Clock Operation
- Self-Timed Write
- Pipelined Read Operation
- Two Bi-Directional Data Buses
- Asynchronous Output Enables

Applications

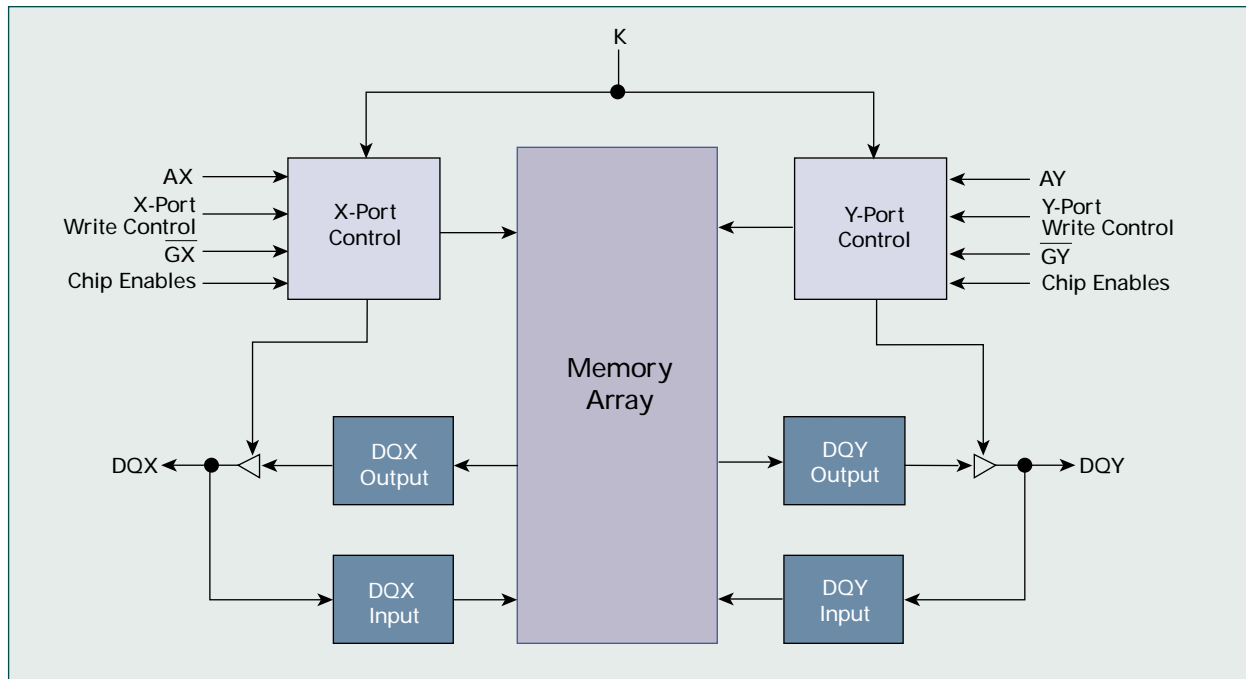
- ATM
- Routers
- Cell / Frame Buffers
- RAID Systems
- Ethernet Switches
- Cellular Base Stations
- SNA Switches



NetRAM Family Summary

Density	1 Mb	4 Mb	8 Mb
Configuration	32K x 36 and 64K x 18	128K x 36	256K x 36
PowerSupply	3.3V ± 5%	3.3V ± 5%	3.3V ± 5% and 2.5V ± 200mV
Write Operation	Self-Timed Early Write	Self-Timed Early Write	Self-Timed Early Write
Read Operation	Pipelined	Pipelined	Pipelined
Deselect	Dual Cycle	Dual Cycle	Dual Cycle
Port-to-Port Pass Through	Yes	Yes	No
Byte Write Capability	No	No	Yes
Operating Frequency	66, 83, 100 MHz	100, 133 MHz	100 MHz
Package	176 TQFP (100 TQFP for x 18)	176 TQFP	209 MAPBGA

NetRAM Block Diagram



Contact Information

Motorola offers data sheets, application notes and models for Fast Static RAM products. In addition, more information is provided for these products at:

<http://mot-sps.com/products>

For all other inquiries about Motorola products, please contact the Motorola Customer Response Center: phone: 800-521-6274 or

<http://www.motorola.com/semiconductors>