

Motorola MPC2605

Integrated Secondary Cache for PowerPC™ Microprocessor Applications

A member of the PowerPC family of components, the MPC2605 groups together all the functions required to implement a level 2 cache design integrated into one chip, eliminating the need for glue logic.

Product Description

The MPC2605 is a single chip 256 KByte integrated look-aside cache with copy-back capability. It integrates data, tag, host interface, and least recently used (LRU) memory with a cache controller. The 32K x 72 bit memory array is organized in a four-way set associative cache design. The 8K x 18 bit integrated tag is associated similarly. The four ways are prioritized in a separate 2K x 8 bit LRU buffer. The cache controller handles bus transactions per the 60X bus interface protocol. One, two, or four of these integrated cache devices can be cascaded to provide 256 KB, 512 KB, or 1 MB of level 2 cache, respectively. Implementation of the different cache sizes as well as the arbitration between the caches in a multi-cache design is performed internally with the use of configuration pins. The control logic is designed to support up to four processors in a shared cache system. A write-through control pin is included to operate the cache in a write-through or copy-back cache design. Additional non-60X bus signals are also incorporated into MPC2605 for flexible interface with other arbiters.

Product Highlights

- Single 3.3 V Power Supply
- 83 MHz Zero Wait State Performance
- Single Chip L2 Cache for 60X bus Applications
- 32 K x 64 Data Memory Array with Parity
- 8 K x 18 Tag Array
- Four Way Set Associative Cache Design
- LRU Cache Control Logic
- Copy Back or Write Through Modes of Operation
- Address Parity Support
- Supports up to Four Processors as a Shared Cache
- Depth Expandable to 64 K x 64 or 128 K x 64 with Parity

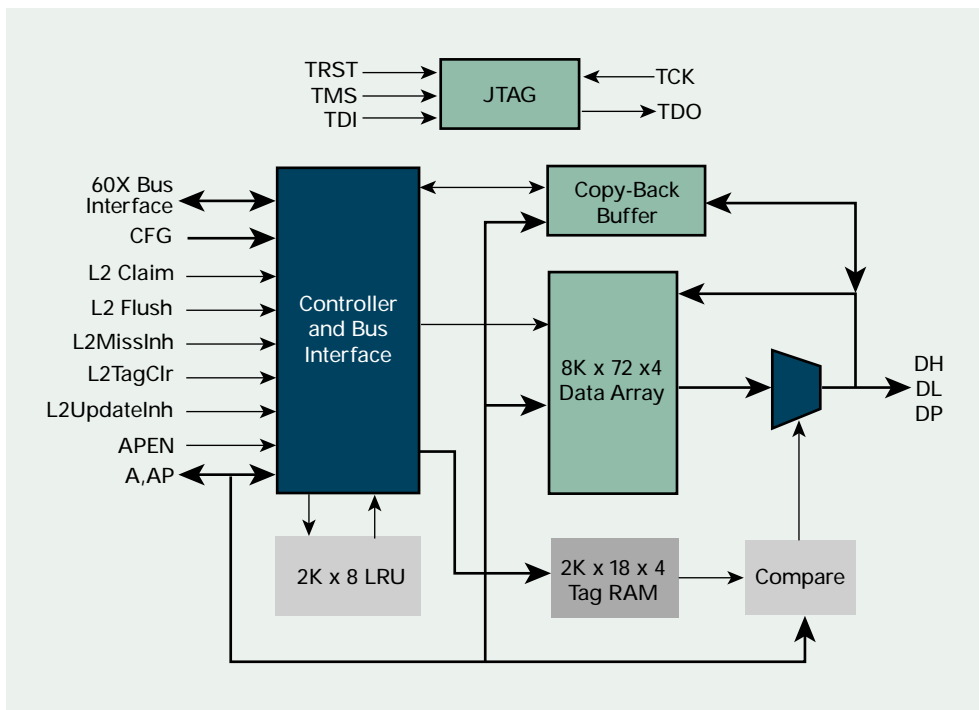


Applications

The MPC2605 is specifically designed for 60X bus applications. It is ideal for MPC603e, MPC604, MPC740, MPC860, and MPC8260 applications needing level 2 cache for an improvement in system level performance.

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MPC2605 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>