

16Z024_SRAM – SRAM Controller IP Core

- **FPGA IP Core**
- **4 MB SRAM controller**
- **Wishbone bus interface**



The SRAM controller handles access to static RAMs up to a size of 4 MB. The SRAM address space has a size of 4MB, so a dedicated Base Address Register is used for the SRAM memory space.

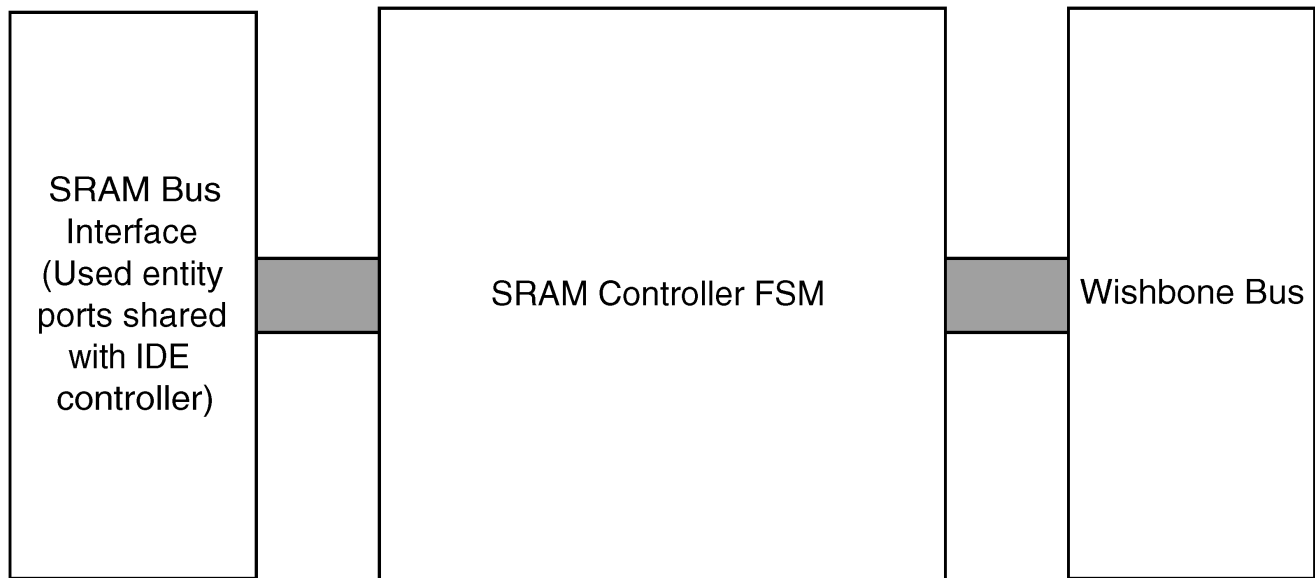
The 16z024 shares entity ports with the IDE Controller 16z023 when both IDE and SRAM controllers are used in the FPGA.

This core is also available as a more flexible variant for the access of a memory device with asynchronous interface (e.g. SRAM or Flash ROM) which includes DP RAMs using a busy signal (low active) to signal an address match. The 16z024-02 is more flexible in that there is no size limitation to 4 MB and variable data widths (8-/16-/32-bit) and various memory configurations are supported.

MEN IP cores are described in standard VHDL language and the standard Wishbone bus is used as the system interface.

By using IP cores, application-specific functions can be performed flexibly and individually in the FPGA on a growing range of MEN CPU boards. These IP cores can be assembled from the MEN function library and reconfigured, combined with IP cores from other providers or even completely redeveloped as required. The FPGA behaves just like a standard PCI component. The FPGA functions are loaded by software when the system is booted and are available in less than 1 s. On PowerPC® platforms the FPGA can be dynamically updated during operation. On Pentium® platforms FPGA updates are also possible in the boot Flash during operation and are then available once the system is rebooted.

Diagram



Technical Data

Size	■ Logic elements (Altera® Cyclone® device family): 280 typ. (101 typ. for 16Z024-02) ■ Pin count min: 26 ■ Pin count max: 60
System-Bus Interface	■ Wishbone bus interface compliant with Wishbone Specification B.3 ■ 32-bit data transfer, 33MHz bus frequency (up to 133 MHz for 16Z024-02) ■ Supported Wishbone bus cycles □ Single read/write
Functionality	■ Access to memory devices (SRAM, Flash ROM) ■ 16z024 □ Up to 4 MB SRAM ■ 16z024-02 □ 8-bit/16-bit or 32-bit data width □ Variable memory configuration

Ordering Information

Software: Linux	This product is designed to work under Linux. See below for potentially available separate software packages from MEN. <table> <tr> <td>13Z024-06</td><td>MDIS4™/2004/MDIS5™ low-level driver sources (MEN) for 16Z024_SRAM</td></tr> </table>	13Z024-06	MDIS4™/2004/MDIS5™ low-level driver sources (MEN) for 16Z024_SRAM
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Software: Windows®	This product is designed to work under Windows®. See below for potentially available separate software packages from MEN. <table> <tr> <td>13Z024-70</td><td>MDIS4™/2004/MDIS5™ Windows® driver (MEN) for 16Z024_SRAM</td></tr> </table>	13Z024-70	MDIS4™/2004/MDIS5™ Windows® driver (MEN) for 16Z024_SRAM
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Software: VxWorks®	This product is designed to work under VxWorks®. For details regarding supported/unsupported board functions please refer to the corresponding software data sheets. <table> <tr> <td>13Z024-06</td><td>MDIS4™/2004/MDIS5™ low-level driver sources (MEN) for 16Z024_SRAM</td></tr> </table>	13Z024-06	MDIS4™/2004/MDIS5™ low-level driver sources (MEN) for 16Z024_SRAM
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Software: QNX®	This product is designed to work under QNX®. For details regarding supported/unsupported board functions please refer to the corresponding software data sheets. <table> <tr> <td>13Z024-06</td><td>MDIS4™/2004/MDIS5™ low-level driver sources (MEN) for 16Z024_SRAM</td></tr> </table>	13Z024-06	MDIS4™/2004/MDIS5™ low-level driver sources (MEN) for 16Z024_SRAM
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Software: OS-9®	This product is designed to work under OS-9®. For details regarding supported/unsupported board functions please refer to the corresponding software data sheets. <table> <tr> <td>13Z024-06</td><td>MDIS4™/2004/MDIS5™ low-level driver sources (MEN) for 16Z024_SRAM</td></tr> </table>	13Z024-06	MDIS4™/2004/MDIS5™ low-level driver sources (MEN) for 16Z024_SRAM
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For operating systems not mentioned here contact MEN sales .			
Documentation	<table> <tr> <td>22Z024-00</td><td>16Z024_SRAM Reference Manual</td></tr> </table>	22Z024-00	16Z024_SRAM Reference Manual
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