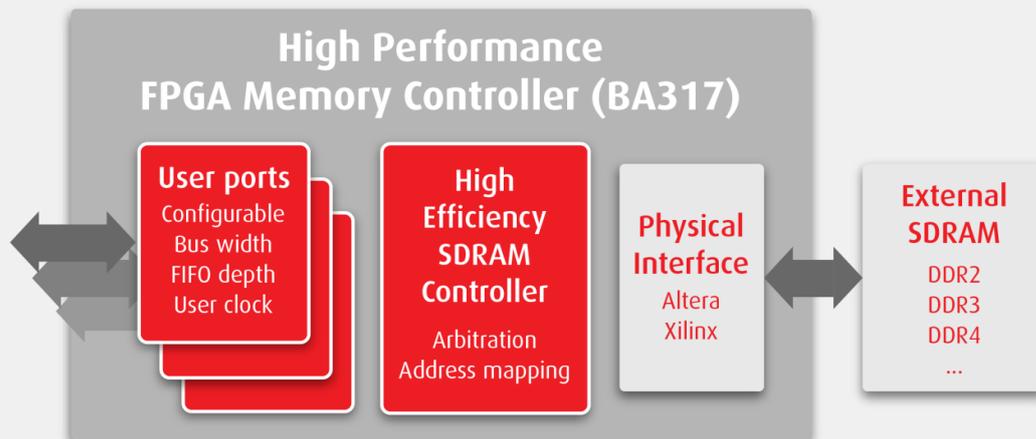


High Performance FPGA Memory Controller



BA317 Product sheet

Silex Insight has developed a High Performance FPGA Memory Controller IP core for demanding applications.



General Description

The BA317 is a highly configurable DDR-SDRAM Memory Controller for FPGA, supporting both Single Data Rate (SDR) and Double Data Rate (DDR, mobile DDR, DDR2, LP-DDR2, DDR3, DDR4) SDRAM devices (discrete as well as DIMMs).

It supports many features to achieve high bandwidth efficiency even with random address accesses. The user interface is a true configurable multi-port interface supporting standard interfaces (AXI or Avalon). The memory controller is optimized for high frequency, low latency and low resource count.

The controller interfaces with the physical interface from the FPGA vendor. It can be implemented on any Xilinx, Altera devices.

The BA317 Memory controller improves the memory access efficiency in applications requiring small burst and random addressing accesses such as image processing and networking.

KEY FEATURES

- Smart arbiter and command sequencer.
- Multiple user ports, each individually configurable.
- Efficiency Monitor
- Synthesizable BIST included
- Fast Single language behavioral model to replace vendor Phy model
- Available on Altera and Xilinx FPGA.

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Detailed technical features

User Interface

- True configurable multi-port controller
- Multi standard support : AXI/Avalon...
- Unlimited number of ports
- Each port can be independently configured
 - FIFO included (configurable)
 - Own asynchronous clock
 - Data bus width

Physical Interface

- Physical interface from the FPGA vendor
- Support for all parameters, features, clock frequencies available on target FPGA.

Smart Controller

- Automatically generates the initialization sequence and periodic refresh
- Optimized for burst of 8 data
- Tracks open rows to minimize Active and Pre-charge times
- SDRAM module serial presence detect supported.
- Configurable refresh management
- Efficiency Monitor
- Quad rate, half rate or full rate

Supported FPGA devices

Altera device families

- Arria 10
- Stratix V, Arria V, Cyclone V including SoC versions
- Stratix IV/III/II, Arria-II, Cyclone IV/III

Xilinx device families

- Kintex & Virtex Ultrascale
- Virtex-7, Kintex-7, Artix-7, Zynq-7
- Spartan-6, Spartan-3
- Virtex-6, Virtex-5, Virtex-4

About Silex Insight

Silex Insight is an electronic design house (ASICs, FPGAs, DSP, boards, embedded SW) specialized in video compression, security and memory controllers. Silex Insight offers the best guarantee for continuous support throughout the complete lifecycle of products.

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