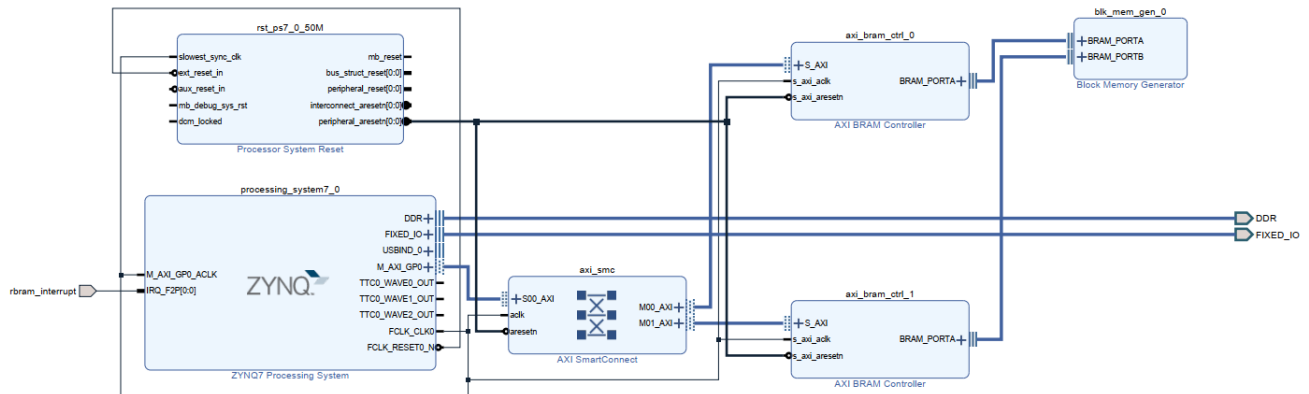


ZYNQ: Write/Read between PS & PL

Date:2021/1/20 Author: YJ Guan

Part 1 - Block Diagram



Part 2 - Operating Mode

Content from Xilinx PG058

Write First Mode: In WRITE_FIRST mode, the input data is simultaneously written into memory and driven on the data output, as shown in Figure 3-9. This transparent mode offers the flexibility of using the data output bus during a Write operation on the same port.

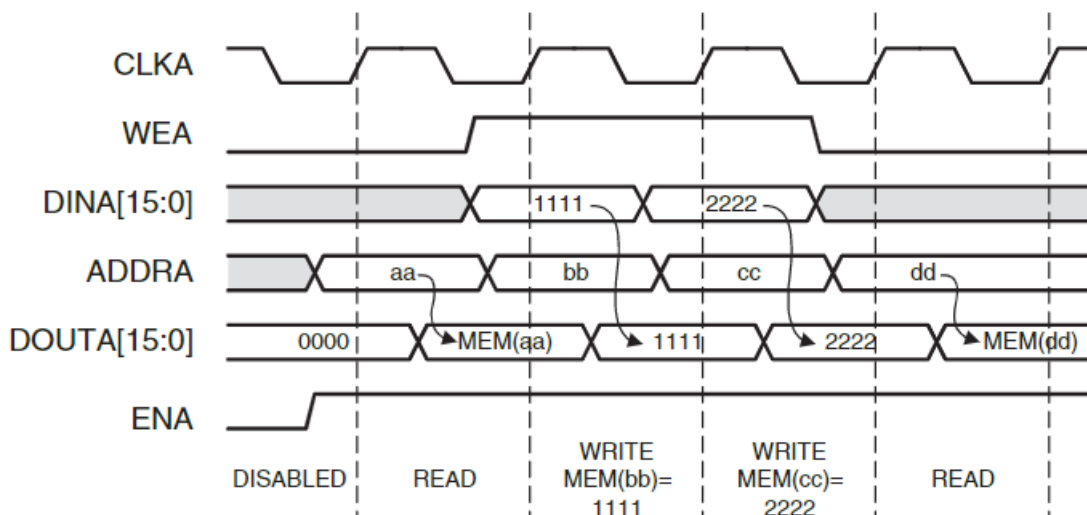
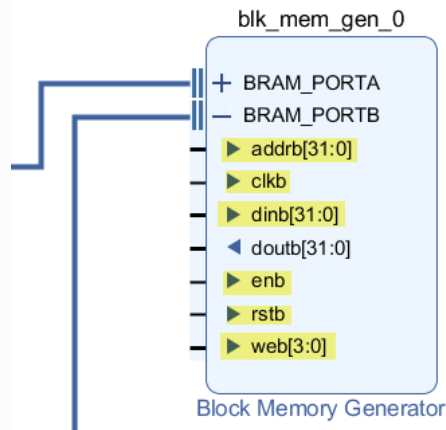


Figure 3-9: Write First Mode Example



Write/Read from PS through AXI BRAM Controller:

Address = $XPAR_AXI_BRAM_CTRL_1_S_AXI_BASEADDR$ (PS Offset) + BRAM_ADDR

Ex: Address = 0x4000_0000 + 0x0000_0010

Write/Read Directly to BRAM through BRAM_PORT through PL:

Address = BRAM_ADDR

Ex: Address = 0x0000_0010

Part 3 - Implementation

Button T18 on zedboard is set as a interrupt port. The PS reading part is interrupted until T18 is pushed. Before that, BRAM can be written from the port B of BRAM.

```

-----Write BRAM-----
-----Write Finished-----
Write interrupt SUCCESS
-----Read BRAM-----
ADDR = 0x50000000
Word = 0x00000000

ADDR = 0x50000004
Word = 0x00000001

ADDR = 0x50000008
Word = 0x00000002

ADDR = 0x5000000c
Word = 0x00000003

ADDR = 0x50000010
Word = 0x00000004

ADDR = 0x50000014
Word = 0x00000005

```