



VLSI Design & Consultancy

DATASHEET

Single Port FF memory
Version 1.0

1 Overview

1.1

The Think-Silicon *Single Port FF memory* generator is a synchronous synthesizable single port memory generator.

2 Features

- Easy to use Graphical Web User Interface
- Synchronous operation
- Unidirectional Read and Write port interfaces
- Configurable memory size

3 Architecture

3.1 Block Diagram

Figure 3-1 represents the basic functional block of the *spmem* module generated by the *Single Port FF memory* toolkit. The memory structure consists of N M -bit registers.

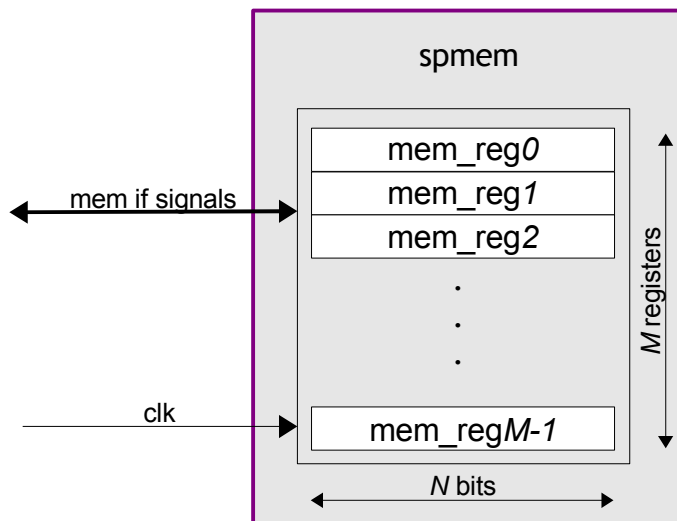


Figure 3-1 *spmem* Block Diagram

3.2 Port Diagram

The *spmem* Port Diagram is shown in Figure 3-2.

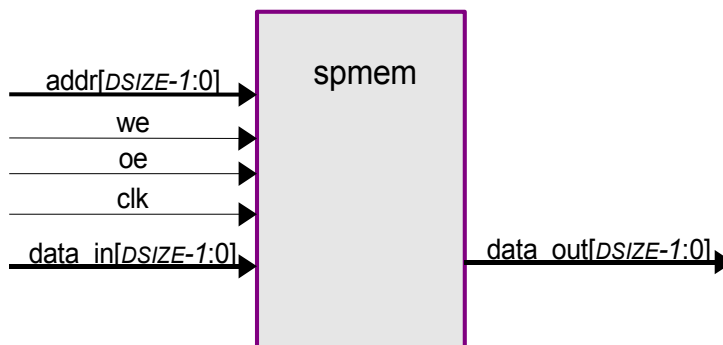


Figure 3-2 *spmem* Port Diagram

3.3 Port Interface

The port signals of *spmem* module are listed in Table 3-1.

Table 3-1 *spmem* Port Interface

PORT	TYPE	DESCRIPTION
addr[ASIZE-1:0]	Input	Address port
data_in[DSIZE-1:0]	Input	Data input port
oe	Input	Output enable
we	Input	Write enable
data_out[DSIZE-1:0]	Output	Data output port
clk	Input	Clock input

4 Generator Usage

The *Single Port FF memory* generator employs a graphical web user interface (GUI) for configuring and generating the *spmem* module. In order to use the GUI you must sign-in Think Silicon Ltd web site. If already registered, click on *Sign-in* link in the upper, right side of the web page. Otherwise click on *Register* link first and follow the instructions. The *Single Port FF memory* generator GUI page is shown in Figure 4-1.

Single Port Register based RAM



Figure 4-1 *Single Port FF memory* generator GUI

As shown in Figure 4-1, the size of the *spmem* memory can be arbitrarily defined by the user. After having completed the configuration parameters, press the *Generate* button in order to generate the *spmem* module.

5 Deliverables

The package generated with *Single Port FF memory* consists of the present document and source code files in Verilog™¹ HDL language. The files are listed in Table 5-1.

Table 5-1 *Single Port FF memory* Deliverables

FILE	DESCRIPTION
spmем_DIMENSION.v	spmем top module
parameters.txt	spmем generation parameters
TSi_spmемs.pdf	The present document

Note: The "DIMENSION" substring refers to memory dimensions and has the form "memory locations x location size in bits", "256x32" for example.

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