

# AHB Octal SPI Controller with Execute in Place (XIP) IP Core

# SILVACO

70114

## DESCRIPTION

The Octal Serial Peripheral Interface (OSPI) core is a serial data link (SPI) master which controls an external serial FLASH device.

Reading and writing the core is done on the AMBA® AHB bus interface. The data is then serialized and then transmitted, either LSB or MSB first, using the standard 4-wire SPI bus interface or the extended Dual, Quad or Octal Bus modes.

The OSPI is compatible with various industry-standard DMA controllers. DMA operation in the OSPI can be enabled to assist a DMA controller in the loading (writing) of the transmit FIFO, and the unloading (reading) of the receive FIFO.

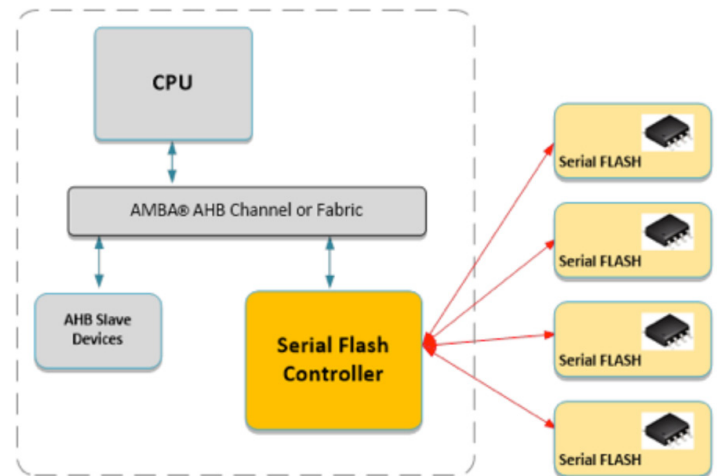
The Execute in Place (XIP) Mode allows an AHB Master to directly read the contents of any of several industry-standard FLASH devices (such as Winbond, Macronix, Spansion and Micron devices) simply by reading from the address space of the QSPI Controller.

## OCTAL SPI CONTROLLER IP CORE FEATURES

- 4, 8, 16 or 32 bit serial transmit & receive
- Full duplex operation
- Half duplex operation support
- DTR (Dual transfer rate) support
- Dual, Quad, Octal modes
- Configurable 64 word Transmit FIFO
- Configurable 64 word Receive FIFO
- AMBA AHB interface
- Interrupt control
- LSB or MSB mode
- Up to 4 slaves under Master control
- DMA Interface
- Compatible with most industry-standard FLASH devices
- Execute-in-place (XIP) functionality for several industry-standard FLASH devices

## OCTAL SPI CONTROLLER IP CORE DELIVERABLES

- Verilog Source
- Complete Test Environment
- AHB Bus Functional Model
- C-Sample Code



# SILVACO

## HEADQUARTERS

2811 Mission College Boulevard, 6th Floor

Santa Clara, CA 95054

Phone: 408-567-1000

Fax: 408-496-6080



## CALIFORNIA

sales@silvaco.com

408-567-1000

## MASSACHUSETTS

masales@silvaco.com

978-323-7901

## TEXAS

txsales@silvaco.com

512-418-2929

## JAPAN

jpsales@silvaco.com

## EUROPE

eusales@silvaco.com

## FRANCE

eusales@silvaco.com

## KOREA

krsales@silvaco.com

## TAIWAN

twsales@silvaco.com

## SINGAPORE

sgsales@silvaco.com

## CHINA

cnsales@silvaco.com

WWW.SILVACO.COM

Rev 090418\_02