

NIOS Processor

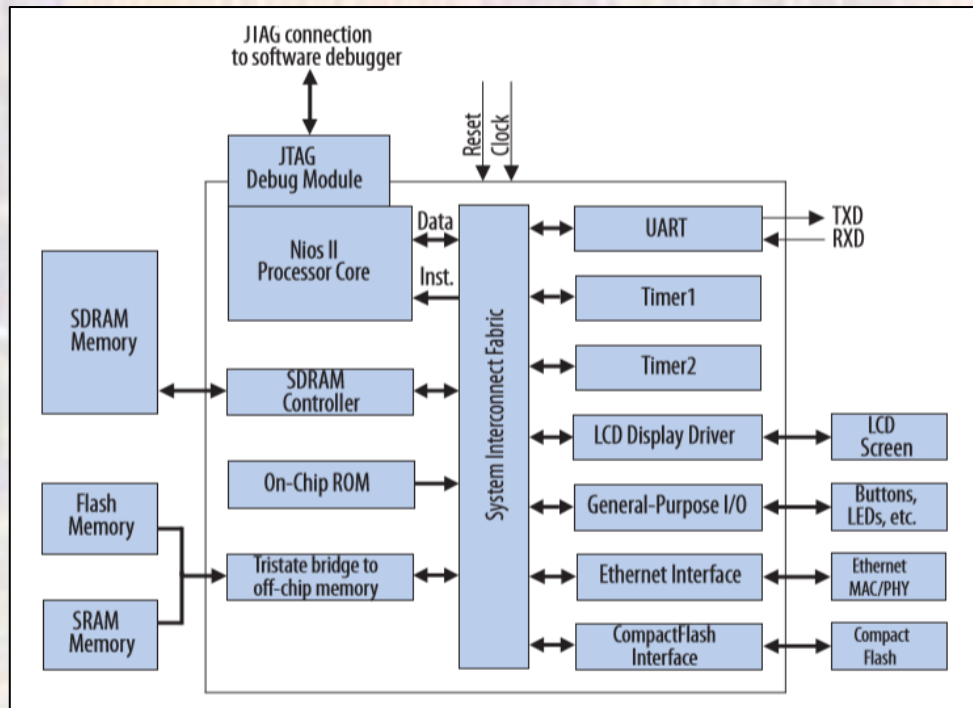
Last updated 7/20/23

NIOS Processor

- FPGA Embedded processors
 - Soft Core
 - Core is built out of pre-configured blocks
 - The blocks are built out of standard FPGA fabric
 - Cores can be customized
 - Limited in frequency
 - Hard core
 - Core is a separate part of the chip
 - Not using the standard FPGA fabric
 - Fixed configuration
 - Physically optimized for performance
 - MAX10 does not have an embedded hard core processor

NIOS Processor

- NIOS System
 - Soft Core Processor – NIOS II
 - System Interconnect Fabric
 - Memory Interfaces
 - Peripheral Interfaces



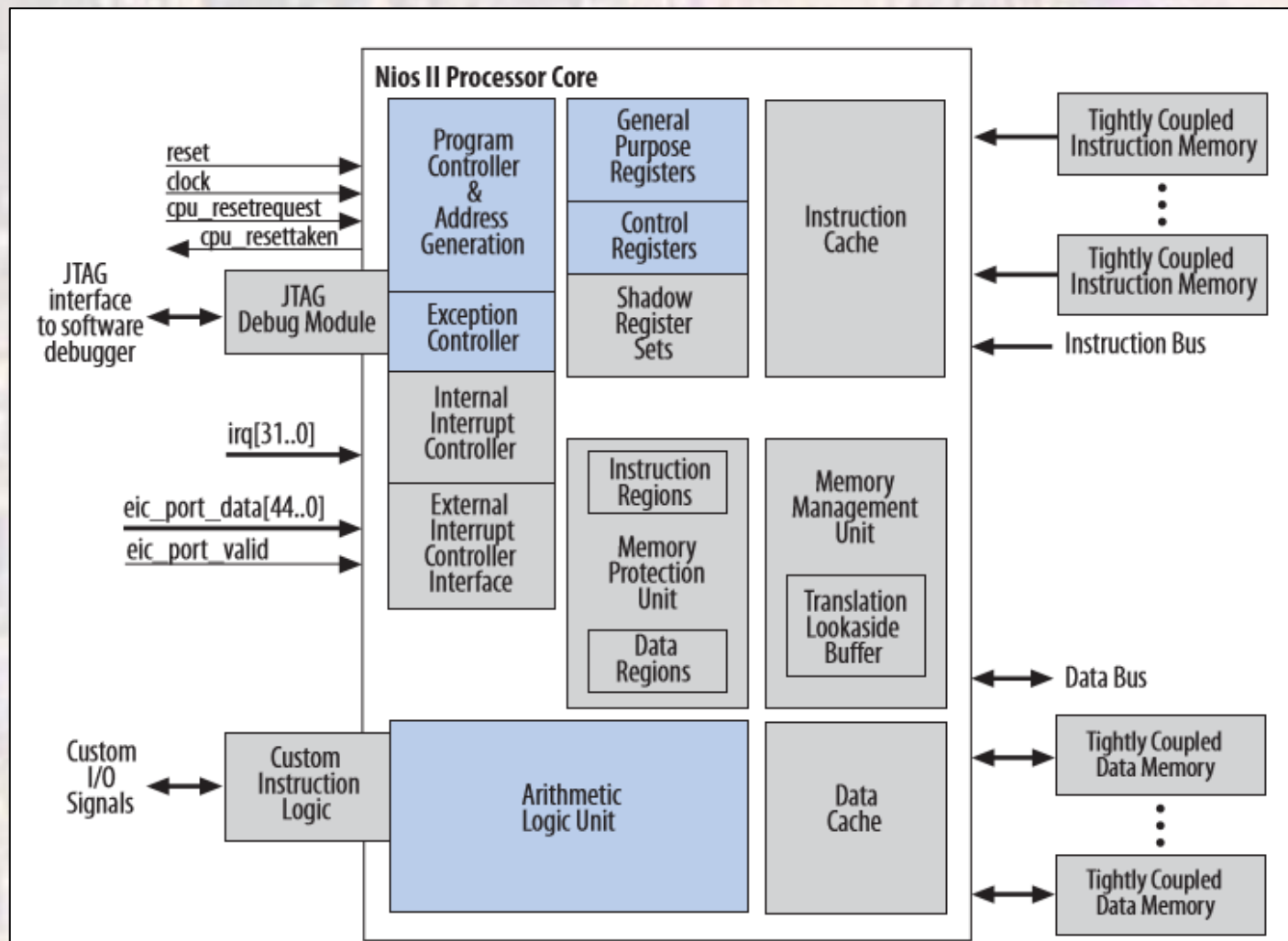
NIOS Processor

Key

Required Module

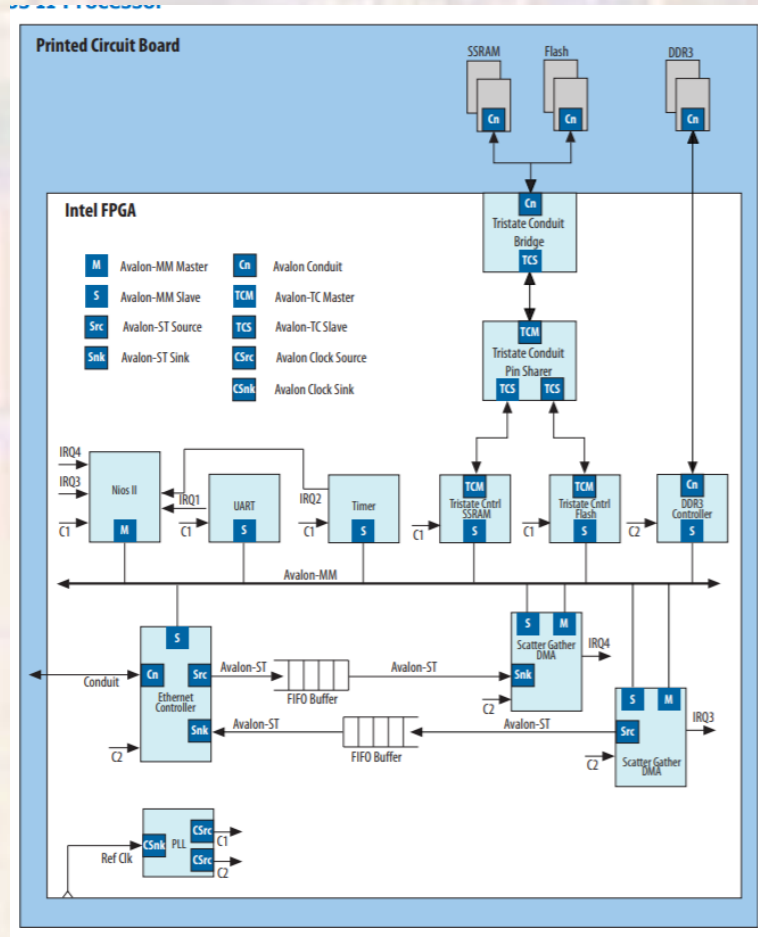
Optional Module

- NIOS Processor Core



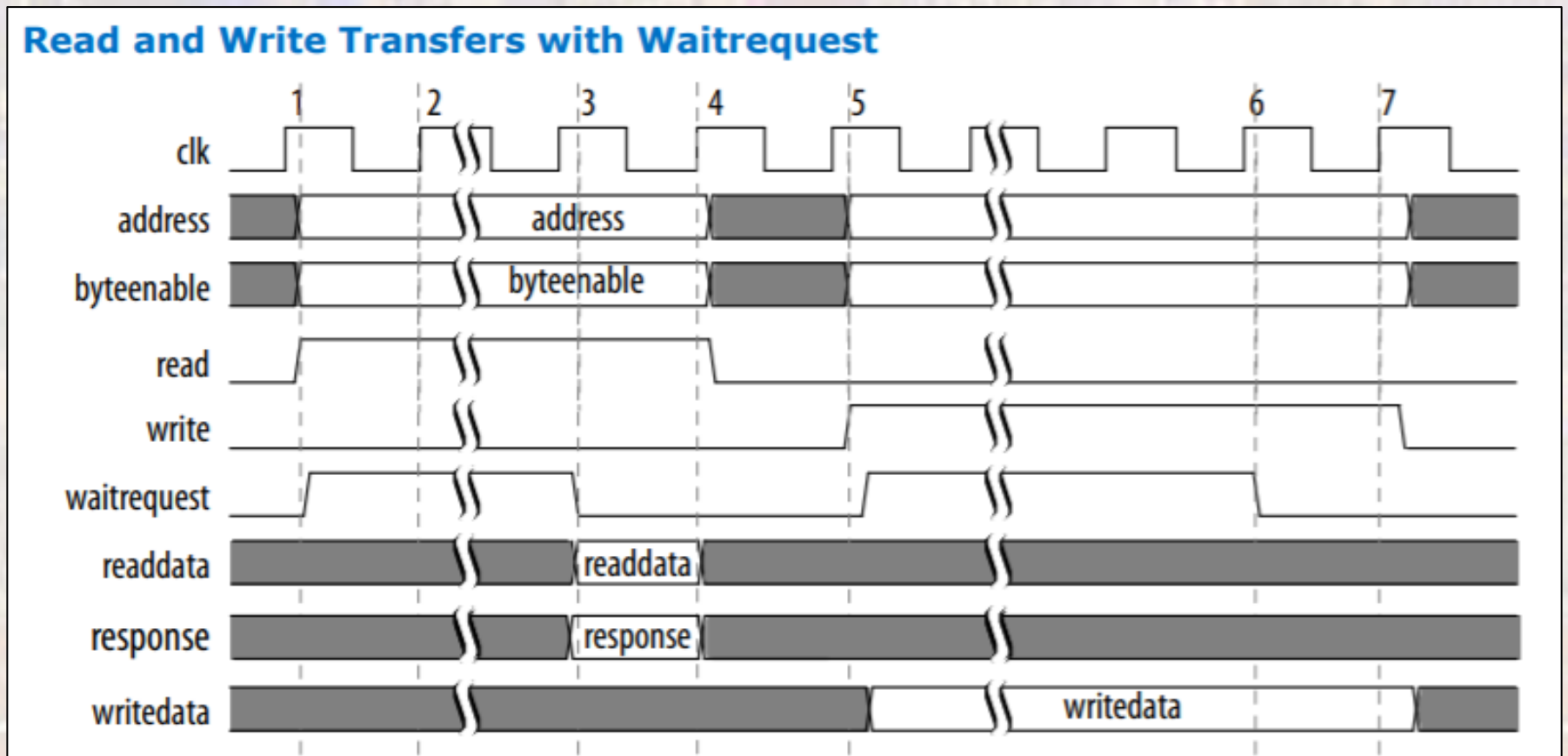
NIOS Processor

- NIOS Interconnect Fabric
 - 2 types of interfaces
 - Memory Mapped
 - Master and Slave
 - Streaming
 - Non-packet and Packet



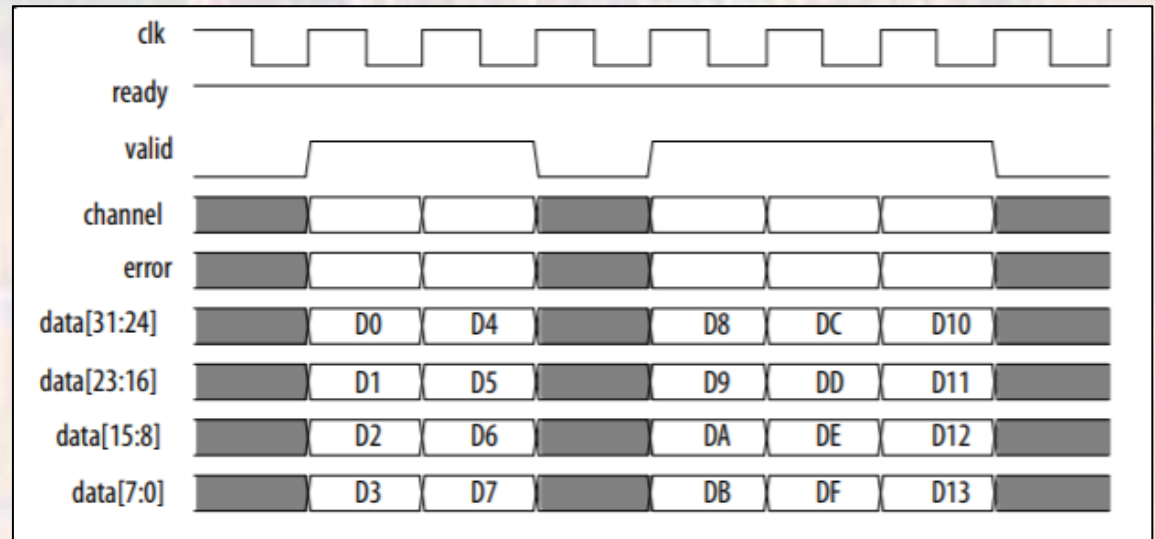
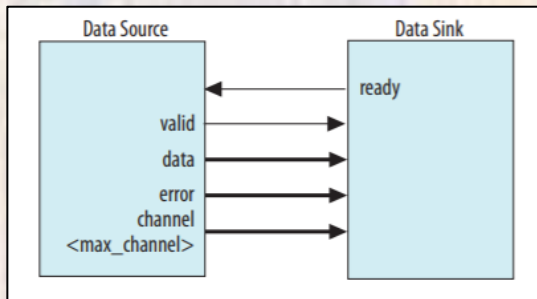
NIOS Processor

- NIOS Interconnect Fabric
 - Memory mapped interface (master and slave)



NIOS Processor

- NIOS Interconnect Fabric
 - Streaming interface – non-packet



NIOS Processor

- NIOS Interconnect Fabric
 - Streaming interface – packet based

