

DMA Controller FPGA IP

The Intel® Multi-Channel Streaming DMA Controller IP provides a small footprint, highly efficient solution for FPGA designs

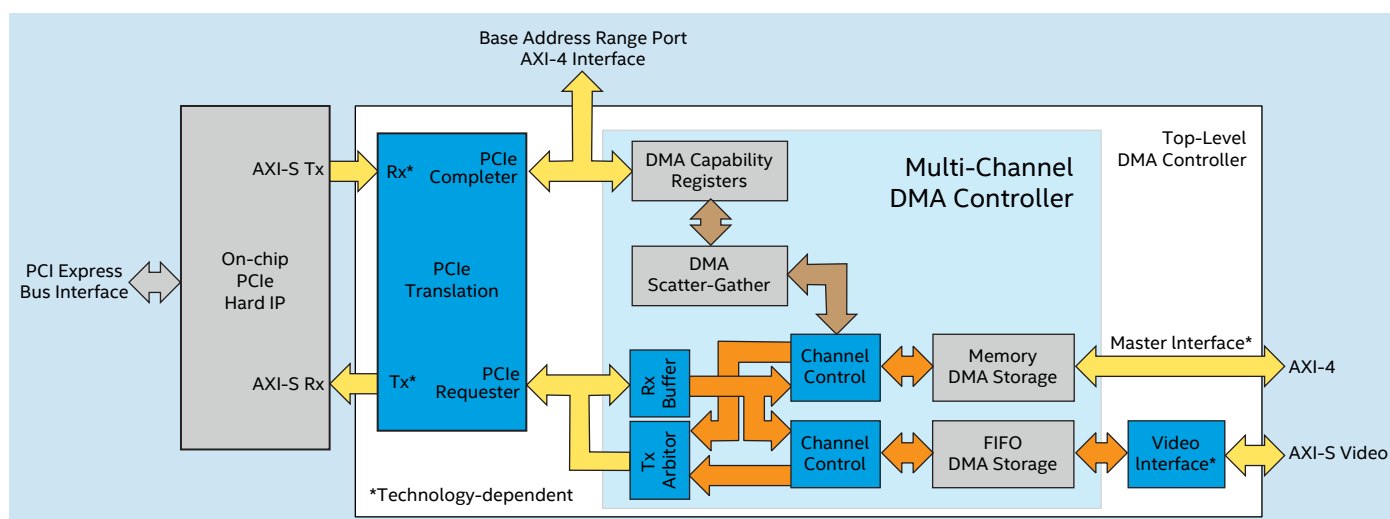


Figure 1. DMA Controller IP block diagram

Summary

The Intel® Multi-Channel Streaming DMA Controller IP provides a small footprint, highly efficient solution for FPGA designs.

This IP Core offers both memory-based DMA for handling transfers to and from addressed memory such as on-board SRAM and SDRAM, and FIFO-based DMA for streaming applications.

Intel's DMA Controller and reference design applications provide the complete solution for rapid inclusion of fast PCI Express data transfers and streaming into FPGA environments. Additionally, Intel's generic software API is platform-independent thus enabling auto-discovery of applications and helping provide a route to the unique PCI identification of the final product.

Key Features

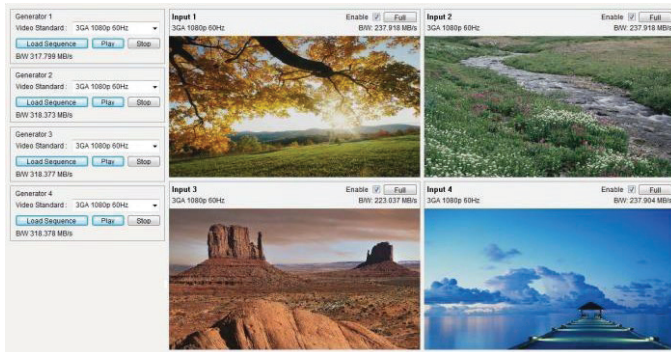
- PCIe-based DMA Controller firmware
- 64, 128 and 256-bit PCIe interface support:
 - PCIe Gen1, Gen2, Gen3 support (dependent on FPGA family)
 - 1 & 2, 4 or 8 PCIe lane support options
- PCIe 8-lane Gen3 supports up to four UHDTV1 (3840 x 2160 p60 video streams).
- Offers both streaming FIFO-based DMA and memory-based DMA channels
- Highly efficient use of PCIe bandwidth, making it particularly suited to data streaming applications
- Support for multiple outstanding read requests
- Pre-fetching of Scatter-Gather descriptors for continuous streaming
- Optimised arbiter for back-to-back packing of Transition Layer Packets (TLP)
- Configurable number of 32, 64 or 128bit FIFO-based DMA streaming channels
- Supports 32-bit or 64-bit addressing
- Free 30-day evaluation

Applications

The Intel Multi-Channel Streaming DMA Controller IP can be used in a range of applications including:

- Video to PCI conversion
- Video capture and storage
- Video analysis

The associated application demonstrates the ability of the DMA controller to simultaneously read and write multiple input video streams. It can work with SD, HD or 3G video. The application also demonstrates the use of the Windows driver and API supplied with the DMA Controller.



Product Options

- 1 & 2, 4 or 8 PCI Express Lane support
- Streaming FIFO-based DMA support
- Number of DMA channels (up to 16)
- FPGA family
- QT application providing register/write DMA functions, source code
- Intel Generic API and Driver source code
- Extended evaluation period (over 30 days)
- Extended support period (over 1 year)

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