AXI4 DMA v1.0

IP User Guide (Alpha Release)

Raptor
Design Suite

January 26, 2023

RapidSilicon

Contents

IP Summary

Introduction

DMA (Direct Memory Access) is a feature of digital systems that allows data to be transferred directly between memory and peripheral devices, without involving the CPU. This can greatly improve performance and reduce the load on the CPU, as the CPU does not have to be involved in the data transfer process. DMA is commonly used for tasks such as transferring audio and video data, and for data transfer between devices such as storage drives and network interfaces. There are different types of DMA controllers, such as the AXI DMA, which uses the AXI bus for communication that allows for easy integration with other AXI based systems. This AXI DMA utilizes the AXIStreaming Protocol for the configuration of descriptors. A macro block diagram for the top level of this AXI4 DMA is shown in Figure 1.
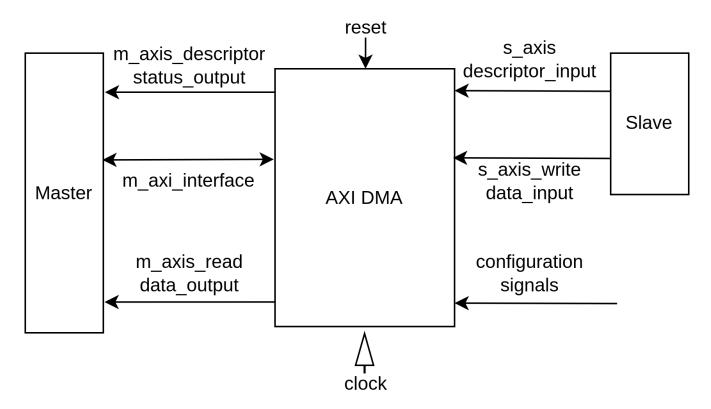
Figure 1. AXI4 DMA Block Diagram

Revision History

Date	Version	Revisions
January 26, 2023	0.01	Initial version AXI4 DMA User Guide Document

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