

PI7C8152B, Asynchronous Feature

By Mohamad Tisani

Introduction

The PCI bus has been used for more than fifteen years and is still running strong. This interface is being developed in PCs, Servers, Notebooks, Datacom and Telecom Systems. With many different PCI devices and peripherals being placed in systems today, the need for PCI Bridges becomes essential. Pericom has added the PI7C8152B Asynchronous PCI-to-PCI Bridge to its growing list of PCI Bridge products. The PI7C8152B is based on the existing PI7C8152, which is in full production. The new PI7C8152B introduces asynchronous mode support as well as enhanced performance. In this application brief, we will describe the asynchronous feature of PI7C8152B.

Benefits

The asynchronous feature allows designers to have the flexibility to run Primary and Secondary busses at asynchronous speeds. This is important especially for interfacing to slower legacy devices. The typical synchronous bridge only allows the secondary bus to run at either the same speed or half the speed of the primary bus. Pericom's asynchronous PI7C8152B will allow the primary and secondary busses to run at any speed between 25 MHz and 66 MHz. For example, the primary can be at 25 MHz while the secondary bus can be at 66 MHz.

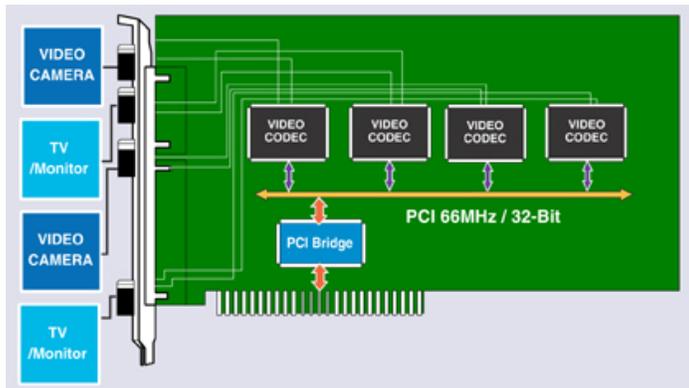


Figure 1

How does it work in asynchronous mode?

In Asynchronous mode, the designer will drive the primary clock at a speed between 25 MHz to 66 MHz onto P_CLK (Pin number 66). The board designer will also provide a clock input to the S_CLKIN (pin number 51) which can be at 25 MHz to 66 MHz. In synchronous mode, the secondary clock outputs are used for devices on the secondary bus. However, in asynchronous mode, the secondary clock outputs cannot be used for the devices on the secondary bus. Instead, the clock buffer used to drive the PI7C8152 B's S_CLKIN must be used for the secondary devices. See Figure 2.

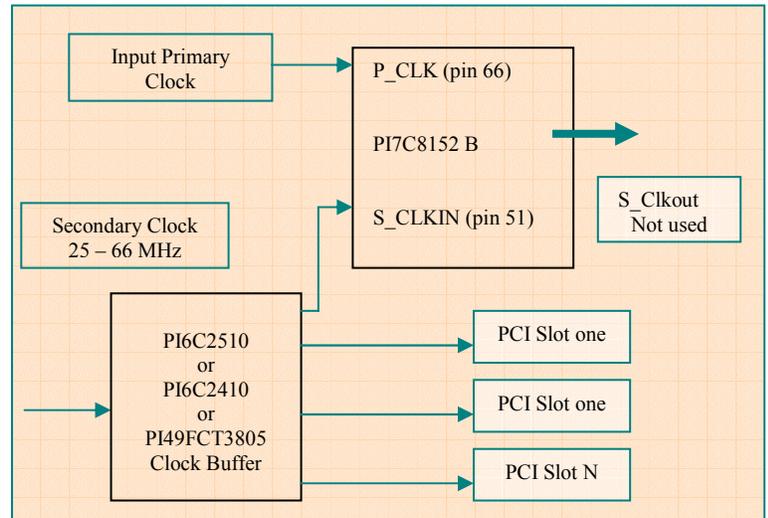


Figure 2

Conclusion

The PI7C8152B can be used in synchronous and asynchronous modes. In Asynchronous mode the designer will have to provide the secondary clock to the 8152B device as well as the clocks for the secondary devices. The Asynchronous feature is very useful since it will allow the designer to run the primary and secondary busses at totally independent clock speeds and alignment