

Big Endian to Little Endian Data Conversion

Using 3.3V Bus Switches

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Introduction

Byte order storage can significantly impact the compatibility between devices within and outside of a system. The order in which data is stored into memory varies according to the application at hand. Big Endian and Little Endian describe the order or sequence in which multi-byte data is stored in memory.

Little Endian specifies that the least significant byte is stored in the lowest memory address. The Intel Pentium™ and Compaq/Dec Alpha™ processors are Little Endian. In turn, Big Endian formatting takes the most significant byte and stores it in the lowest memory address (see Figure 1). The Motorola 680x0 and Sun SuperSPARC™ are Big Endian.

Application Description

Often, based on the application, it is required to convert Big Endian into Little Endian formatting or visa versa. Figure 2 show how Pericom's 3.3V Mux/Demux Bus Switches can be used to perform the required conversion.

In the example, the PI3B16233 is a bidirectional device and can be easily controlled to convert from one format to the other.

Given a double word that is located on the input of the A ports, the PI3B16233 can Mux the word over the B side in the desired order (see Figure 2.)

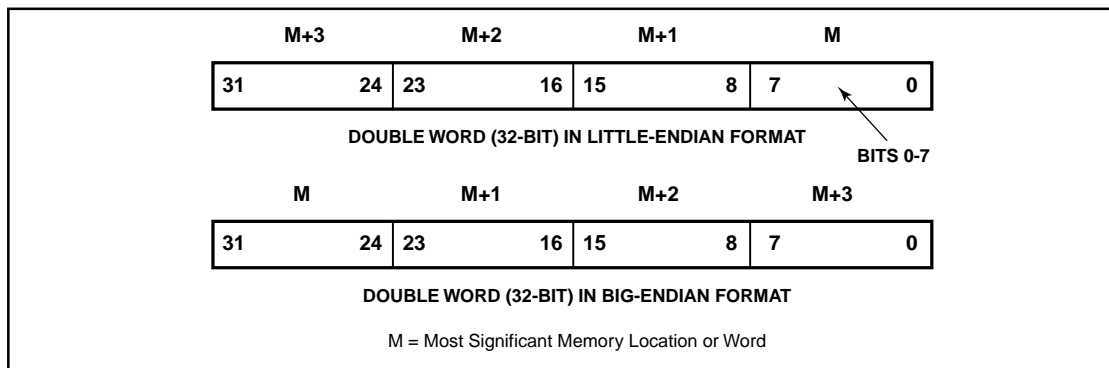


Figure 1. Big Endian vs. Little Endian Memory Formatting

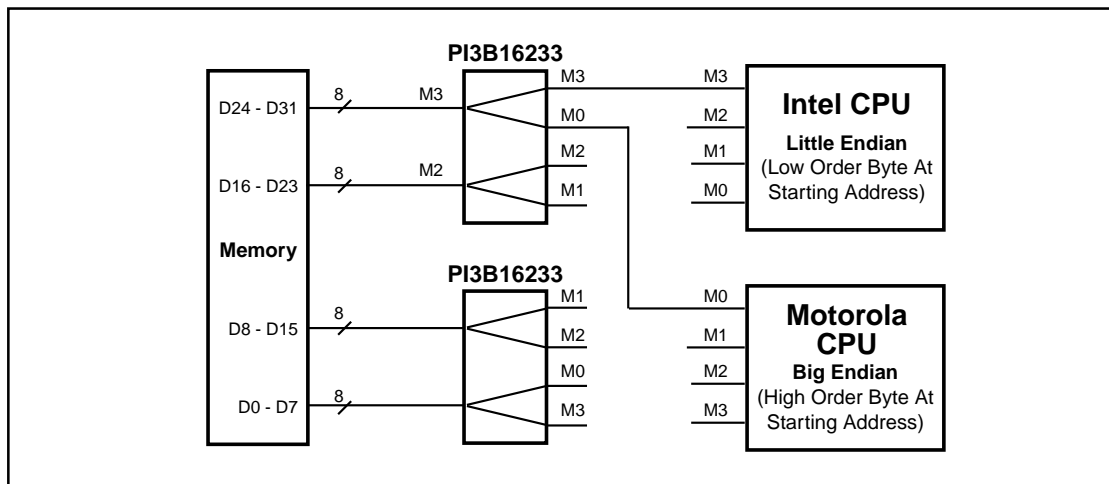


Figure 2. Converting Between Big Endian and Little Endian