Abstract

This paper presents the construction of 32-bit ALU (Arithmetic Logical Unit) using VHDL. The main intention to design 32 bit ALU to defeat the area and power of the design. Which is a digital circuit that executes Arithmetic Logic Unit. ALU is a fundamental building block of the central processing unit (CPU) of a computer, and even the simplest microprocessors contain one for purposes such as maintaining timers. The coding will be written in VHDL and verified in I-Sim. After the coding the synthesis of the code was performed using Xilinx-ISE. Synthesis tool ISE 14.7. The ALU executes the desired operation and generates the result consequently. This designed put away very less area and only 193 LUTs occupy out of 10944 LUTs.

References

Design and Implementation of Low Power 32 Bit Arithmetic Logic Unit

Company Limited, New Delhi, 2002.


Index Terms

Computer Science Circuits and Systems

Keywords

ALU, 32 bit Logic Unit, Shifter. Adder, logic unit, shift unit.