INTRODUCTION

The designed processor is a 16 bit processor which is based on the MIPS architecture. The processor is designed such that it reduces the execution time and the power consumed. The architecture is divided into 2 interacting parts: Datapath and the Control part. The datapath contains structures such as memories, registers, ALUs, and multiplexers. This is a 16 bit datapath. The control unit receives the current instruction from the datapath and tells the datapath how to execute that instruction. Specifically, the control unit produces multiplexer select, register enable, and memory write signals to control the operation of the datapath. Control signals determine which specific instruction is carried out by the datapath at any given time. The controller contains combinational logic that generates the appropriate control signals based on the current instruction.