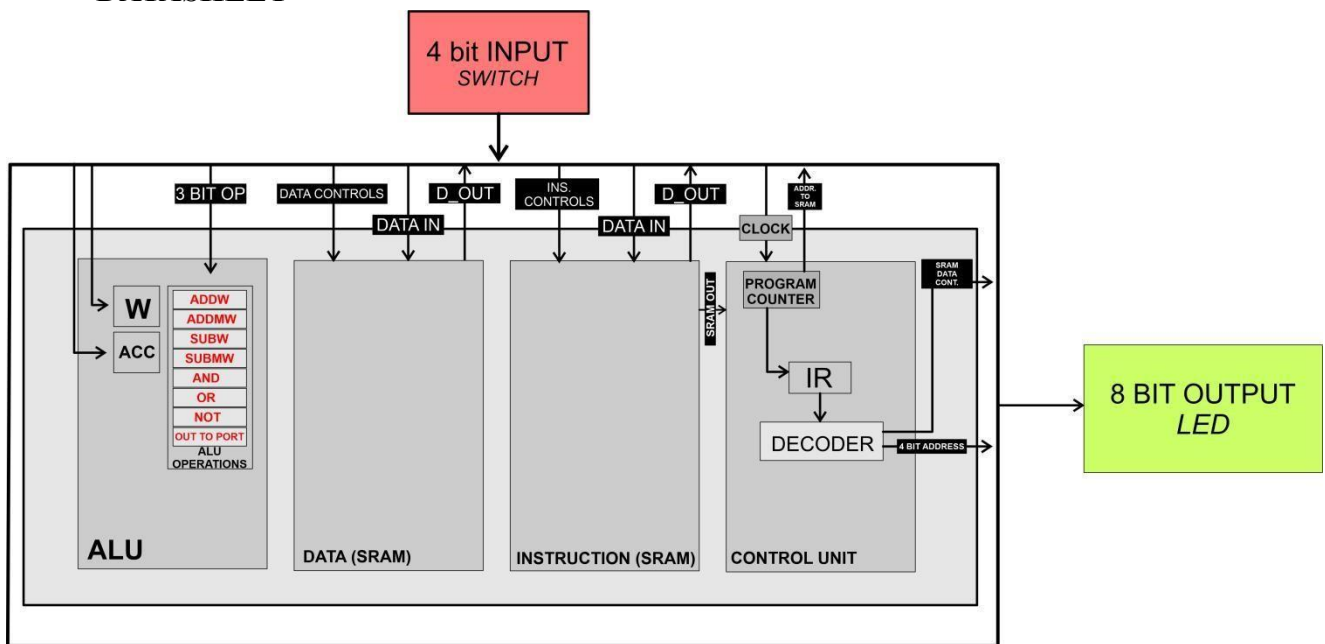


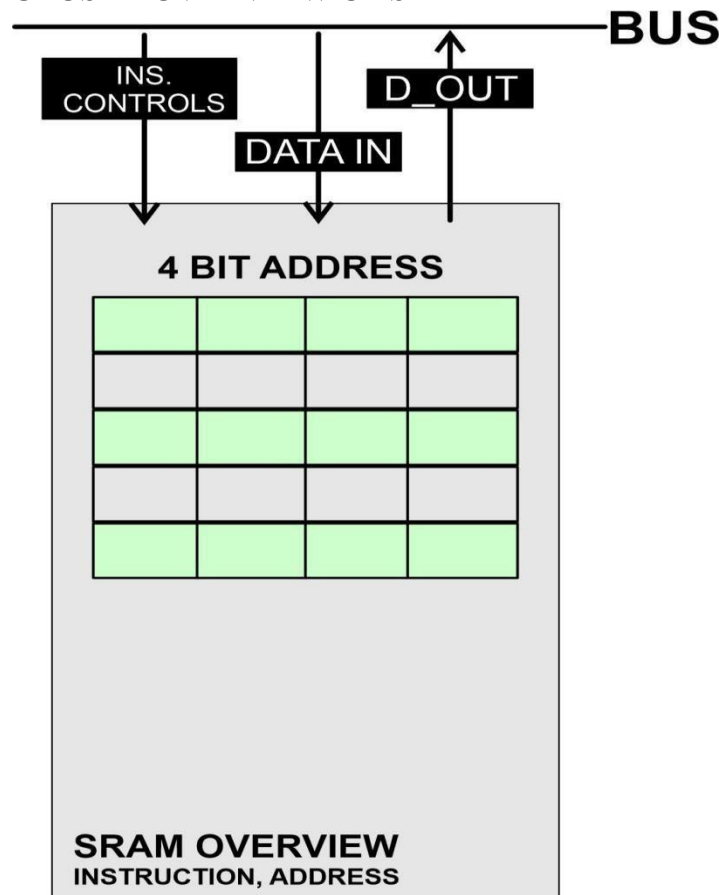
## PURPOSE OF THE CPU

The purpose of this CPU is to perform logical and arithmetic equations that are incorporated using electrical components such as dip switches as input, LED as output, and Cyclone IV FPGA as the base foundation where the instructions are sent, and the operations are performed.

## DATASHEET



## CLOSER OVERVIEW OF SRAM



## FUNCTIONS OF THE CPU

OPERATION	OPERAND	DESCRIPTION
0000	NONE	No operation
0001	SRAM Address	It will copy the data from the SRAM to W.
0010	SRAM Address	Copy the data from W to the SRAM Address.
0011	4 BIT Data	It will copy the immediate data to W.
0100	4 BIT Data	It will compare the value of the data input to W.
0101	NONE	If Zero/Equal Flag is 1, Skip the next instruction.
0110	1 BIT Data	If operand =1, it will be compared if it is greater then Flag; If operand=0, it will compare if it is less than flag
0111	Instruction SRAM Address	Jump to given SRAM address
OPERATION	OPERAND	DESCRIPTION
1000	4 BIT Data	It will add the immediate value to W.
1001	SRAM Address	Add data from SRAM to W.
1010	4 BIT Data	It will subtract the immediate data from W.
1011	SRAM Address	Subtract data from SRAM to W.
1100	4 BIT Data	It will perform AND operation to the immediate value and W.
1101	4 BIT Data	It will perform OR operation to the immediate value and W.
1110	4 BIT Data	It will perform NOT operation to the W.
1111	NONE	Output W to port.