

Design Overview

Kuriseti Ravi Sri Teja

December 2020

1 Basic Overview of Design

We will use two signals A,B. A is the external switch which is used to start the filtering operation.If A=0,the circuit remains in the original state.If A=1 then circuit will proceed for filtering.Then depending on the input provided using push-button B,the filtering operation will smoothen the image if B=0 otherwise it will sharpen the image.

2 Circuits Used in Design

We will use the RAM to store the filtered image,ROM to store the coefficients and MAC to perform multiplications. A helper circuit is designed such that when A=0 and B=1 are applied on initial state,it gives output as 01 and when it is input to a 2x1 multiplexer it produces the sharpened image in RAM.If inputs are A=0 and B=0 the obtained output is 10 and the multiplexer gives smoothened image.