

```

1 //X colum Y row
2 module MAT_X
3     (input clk,
4      input [15:0] X_Ref,
5      input [15:0] X, //Counter 1
6      input [15:0] Base, //Starting Address
7      input [15:0] Y, //Counter 2
8      output reg [15:0] Mat_data_out
9     );
10     always @(*)
11         begin
12             Mat_data_out <= Y*X_Ref + X+Base;
13         end
14 endmodule

```