* Design for Multiplication:-

INPUT2 (16-Bit)

INPUT1 (16-bit)

Comparator

MULTIPLY

Result (32-bit)

Output (16-bit) overFlow

1. Assumption:

* Constant scale factor for inputs and outputs equals 4-bits.

1. Limitations:

* To be in safe zone, Number of bits in integer parts equal 6- bits, So I can take the result 12 bits and doesn’t occur overflow.

1. Validation:

* Overflow flag set to ‘1’ if there is overflow.
* Overflow doesn’t occur, if the sign bit in output doesn’t extend in all the rest of bits