FA MODULE COEFFICIENT SHIFT COUNT

The FA module calculates the difference of the exponents of each pair of operands. The difference is used as the number of places to shift the coefficient so that the two exponents can be equalized.

Hardware implementation examples: the hardware calculates two difference results. Whether or not there is a carry out of the upper bit position allows the hardware to select the proper difference result. The proper result is then used as a shift value.

$(k-j) = (k+\overline{j})$

k = 40006 ⟶ k = 40006

j = 40001 ⟶ compliment j = 37776 add

C 00004

+ 1 select result with carry into group 0

5 shift coefficient right five places

k = 40001 ⟶ k = 40001

j = 40006 compliment j = 37771 add

$\overline{C}$ 77772

select the compliment of the result with no carry into group 0

00005 shift coefficient right five places

C0001C0433