FA MODULE EXPONENT DIFFERENCE

The FA module calculates the difference of the exponents of each pair of operands. The difference is used to determine which exponent is larger. For a normal floating add or subtract process the larger of the two exponents is retained. The larger exponent is sent on to the FC module as the exponent for the final result before the normalization process takes place on the FC.

The FA module always subtracts the j operand exponent from the k operand exponent. The hardware performs an actual k plus compliment j in a fifteen bit adder. A carry out of the upper bit position means that the k operand is the larger and should be retained. If there is no carry out of the upper bit position the j operand is larger and should be retained. The state of the carry is used by the hardware to select the exponent to pass on. The larger exponent is sent, along with its corresponding coefficient sign bit, to the FC module.

In the special case of the integer to floating point conversion the exponent difference is ignored. The j operand is forced to be passed on as the larger.

C0001C0431