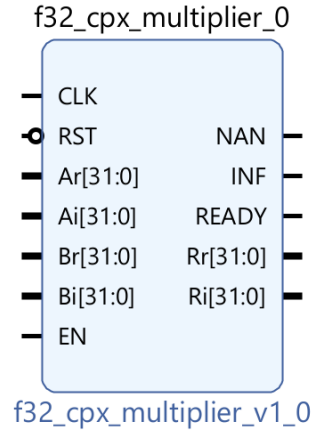


IEEE754 single precision floating point (f32) support Complex Multiplier



This IP computes multiplication of two complex inputs ($Ar \pm Ai$) and ($Br \pm Bi$) (in [IEEE754 single precision floating point format](#)). The result is also in the same format:

$$(Rr \pm Ri) = (Ar \pm Ai) * (Br \pm Bi)$$

Depending on the input value(s), the result can be NaN or Infinite. This case is shown by NAN and INF outputs.

All Input/Output descriptions can be found in the following table.

Pin name	Description	Direction	Property
CLK	CLK input	IN	1bit
RST	Reset input	IN	1bit, active High
EN	Enable	IN	1bit, active High
Ar	Real part of Multiplication operand-1	IN	32bit, IEEE754 single precision floating point format
Ai	Imaginary part of Multiplication operand-1	IN	32bit, IEEE754 single precision floating point format
Br	Real part of Multiplication operand-2	IN	32bit, IEEE754 single precision floating point format
Bi	Imaginary part of Multiplication operand-2	IN	32bit, IEEE754 single precision floating point format
Rr	Real part of Multiplication Result	OUT	32bit, IEEE754 single precision floating point format
Ri	Imaginary part of Multiplication Result	OUT	32bit, IEEE754 single precision floating point format
NAN	Result is not valid: NaN (Not a Number)	OUT	1bit, active High
INF	Result is not valid: +/- Infinite	OUT	1bit, active High