NAME

mulprom - creates a prom file for a table lookup multiplier

SYNOPSIS

mulprom [**-n** #] [**-bhd**] [**-c** #] [**-r** #] [**-a** #] [**-i** #] [**-s** #] [**-t**] [**-M**] [**-m**] [**-+**] [**-2**] [**-H**] [output_file]

DESCRIPTION

mulprom is a program useful for generating PROM files which implements a table lookup multiplier.

The first number, the impulse response multiplier, can be in any of three formats, namely sign and magnitude, two's complement, or all positive. The default is seven bits of sign and magnitude. The second number, the signal can be two's complement or sign and magnitude. The default is eight bits of two's complement.

One can specify the number of bits for the multiplier and multiplicand and the total number of address bits for the PROM. The multiplier (impulse response) is applied to the high order address bits and the multiplicand (signal value) is applied to the low order address bits.

The product is always in two's complement format. If the -2 flag is not used (see below) then the most significant 8 bits of the product are output. If the number of PROM address bits exceeds the sum of the multiplier bits and multiplicand bits, then only the low order part of the PROM is used.

There are a large number of optional arguments to enable customization of the computed PROM contents. When in doubt, try a small example.

OPTIONS

The command line options to mulprom are :

-n # specify the number of bits to be used for binary or hex output formats. The default is 16.

-bhd specify the output format to be in binary, hex, or decimal. The default is hex.

-c # Set the number of columns to be used. The default is 8.

-r # Set the number of rows to be used. The default is 8.

-a # Set the number of PROM address bits to be

used. The default is 15.

-i # Set the number of impulse response (multiplier) bits to be used. The default is 7.

-s # Set the number of sample (multiplicand) bits to be used. The default is 8.

-t Specify a two's complement impulse response. The default is sign and magnitude.

-M Specify a sign and magnitude signal format. The default is two's complement.

-m Don't clamp or limit the maximum positive output which is achieved by squaring the maximum negative number. The default is to limit the maximum value when not using the packed bytes format (see below).

-+ Specify the impulse response to be all positive numbers. The default is sign and magnitude.

-2 Use a packed bytes format (see dat2ntl) where the least significant byte of a two byte answer precedes the most significant byte. That is, the LSB of the PROM address is used to select between the least and most significant bytes. The default is a single byte of precision which is left shifted to retain the maximum amount of precision possible in and eight-bit answer.

-H Print out a brief summary of the arguments usage.

SEE ALSO

mtable(1)

BUGS

AUTHOR

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