

Idea (1A)

- Rising Clock Edge
- Falling Clock Edge
-

Copyright (c) 2010 Young W. Lim.

Permission is granted to copy, distribute and/or modify this document under the terms of the GNU Free Documentation License, Version 1.2 or any later version published by the Free Software Foundation; with no Invariant Sections, no Front-Cover Texts, and no Back-Cover Texts. A copy of the license is included in the section entitled "GNU Free Documentation License".

Please send corrections (or suggestions) to youngwlim@hotmail.com.

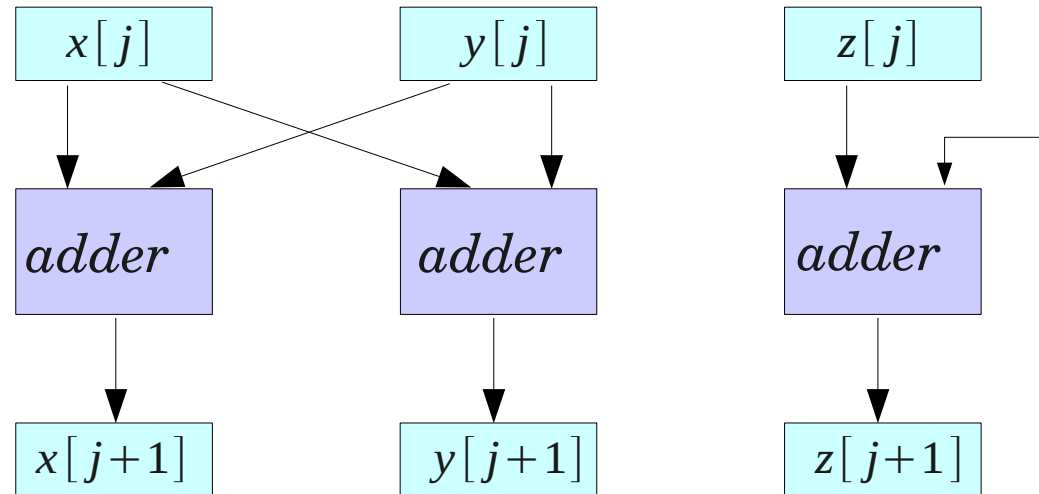
This document was produced by using OpenOffice and Octave.

The CORDIC Equations

$$x[j+1] = x[j] - \sigma_j 2^{-j} y[j]$$

$$y[j+1] = y[j] + \sigma_j 2^{-j} x[j]$$

$$z[j+1] = z[j] - \sigma_j \tan^{-1}(2^{-j})$$



The New CORDIC Equations

$$x[j+1] = x[j] - \sigma_j 2^{-j} y[j]$$



$$x[j] = x[j+1] + \sigma_j 2^{-j} y[j]$$

$$y[j+1] = y[j] + \sigma_j 2^{-j} x[j]$$

$$y[j+1] = y[j] + \sigma_j 2^{-j} (x[j+1] + \sigma_j 2^{-j} y[j])$$

$$y[j+1] = (1 + \sigma_j^2 2^{-2j}) y[j] + \sigma_j 2^{-j} x[j+1]$$

$$y[j+1] = (1 + 2^{-2j}) y[j] + \sigma_j 2^{-j} x[j+1]$$

$$z[j+1] = z[j] - \sigma_j \tan^{-1}(2^{-j})$$

References

- [1] <http://en.wikipedia.org/>
- [2] J.H. McClellan, et al., Signal Processing First, Pearson Prentice Hall, 2003
- [3] A “graphical interpretation” of the DFT and FFT, by Steve Mann