Abstract

The residue number system (RNS) has computational advantages for large integer arithmetic because of its parallel carry free, and high-speed arithmetic nature. However, magnitude comparison is a very complex operation for RNS. This paper presents a new comparison algorithm based on the modification of Mixed-Radix Conversion II technique. The new algorithm uses small modulo operations only and has a linear time complexity in terms of the size of the moduli set.

References

3. P. Albicocco, G. C. Cardarilli, A. Nannarelli, and M. Re. Twenty years of research on RNS
An Algorithm for Magnitude Comparison in RNS based on Mixed-Radix Conversion II


Index Terms

Computer Science

Algorithms
Keywords

Residue number system, magnitude comparison, mixed-radix conversion, MRC-II