Minimization of Multiple Value function using Quine Mc-Cluskey Technique

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Abstract

This paper presents minimization technique for multiple value function using Quine Mc-Cluskey’s method. This paper provides steps for the minimization of multivalued function i.e. radix >2 digital system. The ternary digital system which radix=3 is considered here minimized function of MVL function implemented using decoder and multiplexer and answer is verified using ternary k-map.

As the radix of system increases, the difficulties in the minimization or reduction of logic function is get increases. It becomes difficult to for higher radix to reduce the function design equation. In this paper we successfully applied Quine Mc-Cluskey’s technique to ternary system.

In this paper simplified expression designed using decoder and ternary gate. Same expression implemented using ternary multiplexer. Hardware required for both cases is evaluated. It incorporates all designed rules for ternary logic system design and gives the output in the form of Sum-of-Product (SOP) terms.
References

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Index Terms

Computer Science
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Keywords

Multivalued, Radix; Sum-of-Product (SOP), Ternary, Unary function