

Method of Synthesis of Controlled Generators Balanced a Strictly Avalanche Criteria-Functions

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Abstract : In this paper, a method for constructing a controlled balanced Boolean function satisfying the criterion of a Strictly Avalanche Criteria (SAC) effect is proposed. The proposed method is based on the use of three orthogonal nonlinear components which is unlike the high-order SAC functions. So, the generator synthesized by the proposed method has separate sets of control and information inputs. The proposed method proves its simplicity and the implementation ability. The proposed method allows synthesizing a SAC function generator with fixed control and information inputs. This ensures greater efficiency of the built-in oscillator compared to high-order SAC functions that can be used as a generator. Accordingly, the method is completely formalized and implemented as a software product.

Keywords : boolean function, controlled balanced boolean function, strictly avalanche criteria, orthogonal nonlinear

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