Unique anti-counterfeiting identification of integrated circuits

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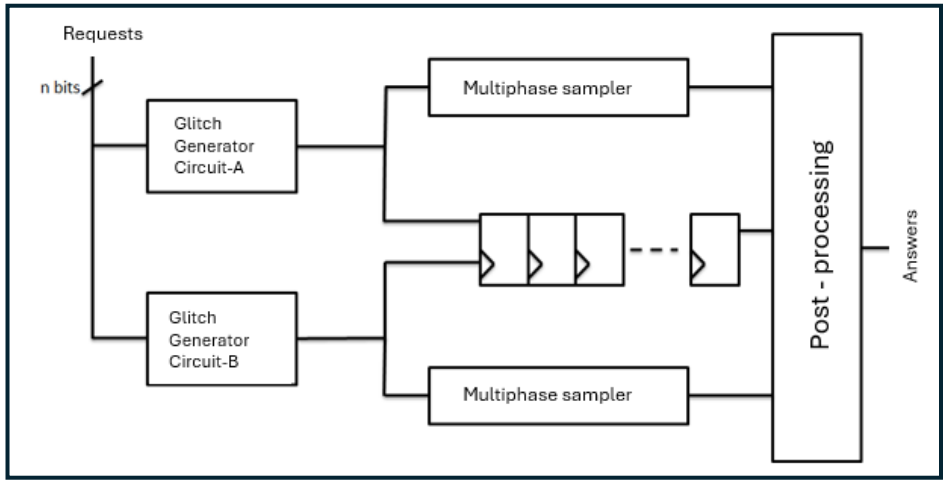
Summary/Characteristics

Researchers from the Carlos III University of Madrid have developed a small PUF-type (Physically Unclonable Function) circuit inserted into an integrated circuit to detect whether it is original, and not counterfeited or tampered with. Its basis is sending pattern signals, detecting the response "fingerprint" specific to each integrated circuit due to minimal manufacturing imperfections, and comparing it with the stored "fingerprints" of those already manufactured. It features a delay-type design and has the advantage of being very robust against predictive attacks. The technology is useful for Defense, Space, Automotive, and IoT.

Cooperation is sought with companies focused on security-oriented applications with which to develop the technology and offer a market exit, with the possibility of including it in the partner's product catalog.

Innovative Aspects

- Easy implementation of PUF (Physically Unclonable Function) circuits.
- Utilizes the same combinational digital technology present in the integrated circuit.
- Includes two “glitch” or pulse generators.
- Generates more challenge / response pairs.
- Higher operating frequency.



System Logical Operating Diagram

Competitive Advantages

- Integrates a detection system for counterfeit, non-original, reused integrated circuits, etc.
- Greater robustness against predictive attacks.
- Ensures high repeatability.
- Direct application to critical systems and sector requiring high security: Defense, Aerospace, Automotive...

Technology readiness level:

Concept stage. TRL 2.

Intellectual and Industrial Property Status:

IPR granted. Title: “Dispositivo y procedimiento para la identificación unívoca de un circuito integrado.”

Type of collaboration sought:

Collaboration is sought in the form of:

- Investment agreements
- Comercial agreements with technical assistance

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