Abstract: The invention is directed to a system for securing an integrated circuit chip used in an electronic device by utilizing a circuit or other entity to produce physically unclonable functions (PUF) to generate a security word, such as an RSA public or private key. A PUF, according to its name and configuration, performs functions that are substantially difficult to be duplicated or cloned. This allows the invention to provide a unique and extremely secure system for authentication. In operation, the stored parameters can be used to more efficiently and quickly authenticate the device without the need to run the burdensome security key generation processes without compromising the level of security in the device. Such a system can be used to substantially eliminate the time to produce security keys when a user needs to authenticate the device at power up or other access point.

Title: ELECTRONICALLY SECURING AN ELECTRONIC DEVICE USING PHYSICALLY UNCLONABLE FUNCTIONS

[Continued on next page]
Published:

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(88) Date of publication of the international search report: 26 February 2009
**A. CLASSIFICATION OF SUBJECT MATTER**

IPC(8) - H04L 9/00 (2008.04)  
USPC - 713/164  

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)  
USPC: 713/164

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched  
USPC: 713/150, 164, 168, 171, 189, 350/28, 30, 44, 46

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)  
PubWest(PGPB, USPT, USOC, EPAB, JPAD); Google  
Search Terms Used: electronically securing, electronic device, physically unclonable, PUF, security keys, error correction process, transfer function, prime number, seed values, decryption etc.

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

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<th>Category</th>
<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
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Date of the actual completion of the international search: 26 November 2008 (26.11.2008)

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