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Wong

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(54) **ENCRYPTION FOR A STREAM FILE IN AN
FPGA INTEGRATED CIRCUIT**

(75) Inventor: **Wayne Wong**, Sunnyvale, CA (US)

(73) Assignee: **Actel Corporation**, Mountain View, CA (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 583 days.

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(51) **Int. Cl.**
H04L 9/18 (2006.01)

(52) **U.S. Cl.** **713/189**; 716/16; 716/17;
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326/8, 37-41, 4, 44; 380/44, 42, 37; 708/232,
708/626; 712/206; 713/191, 188, 189, 193
See application file for complete search history.

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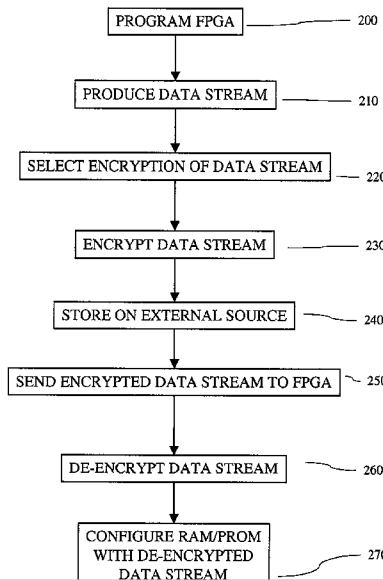
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Primary Examiner—Kambiz Zand
Assistant Examiner—Yin-Chen Shaw
(74) *Attorney, Agent, or Firm*—Lewis and Roca LLP

(57) **ABSTRACT**

A system for encrypting and decrypting data in a data stream for programming a Field Programmable Gate Array (FPGA). The system allows for an enable bit to be set for a gap in the data stream and the data is then encrypted from the beginning of the gap. A gap being bits in said data stream that correspond to unprogrammed addresses of a memory in the field programmable gate array. The data is then decrypted by the FPGA when the bit stream is received and an enable bit is detected in a gap of the data stream.

30 Claims, 4 Drawing Sheets



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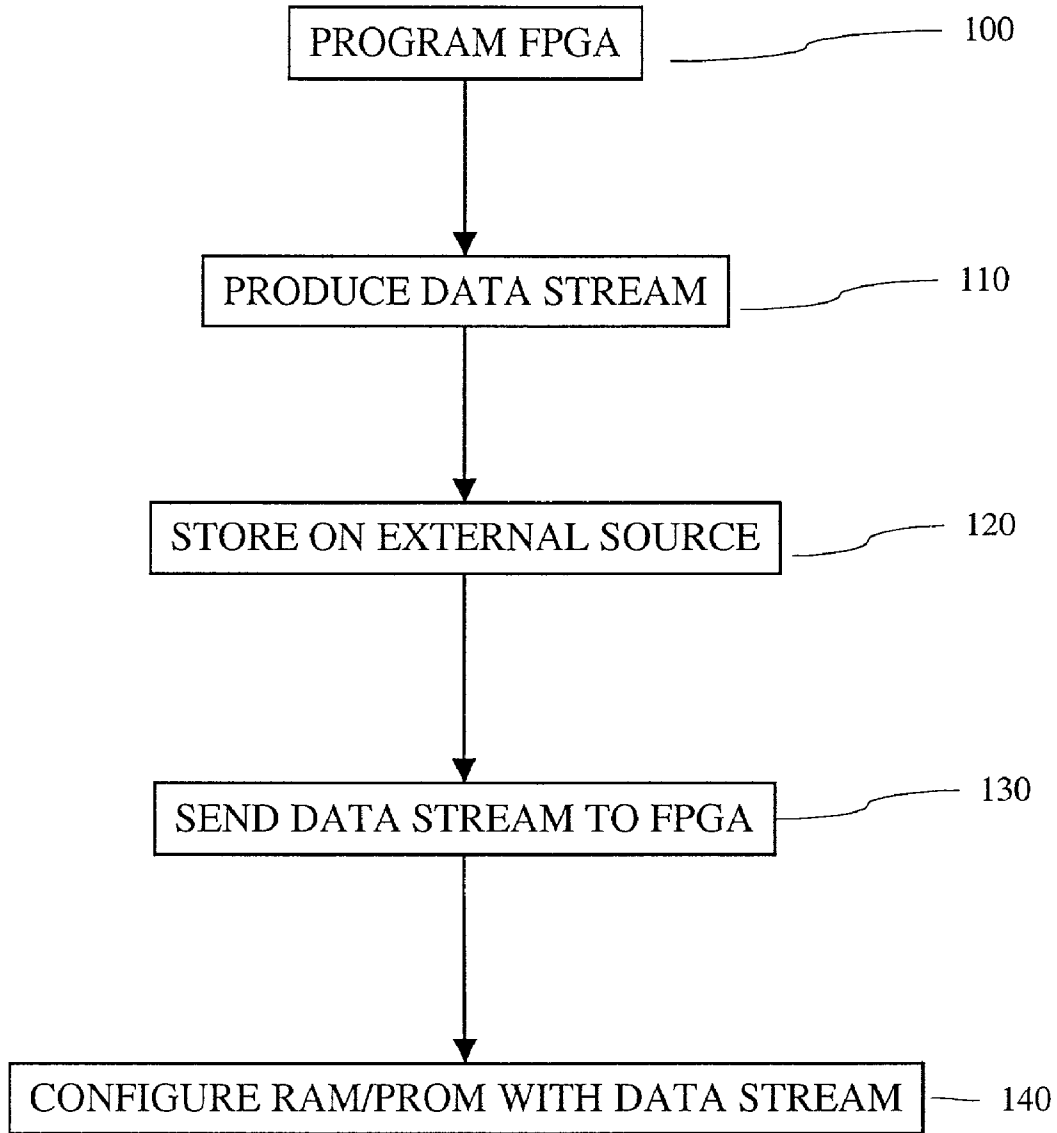
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PRIOR ART

FIG. 1

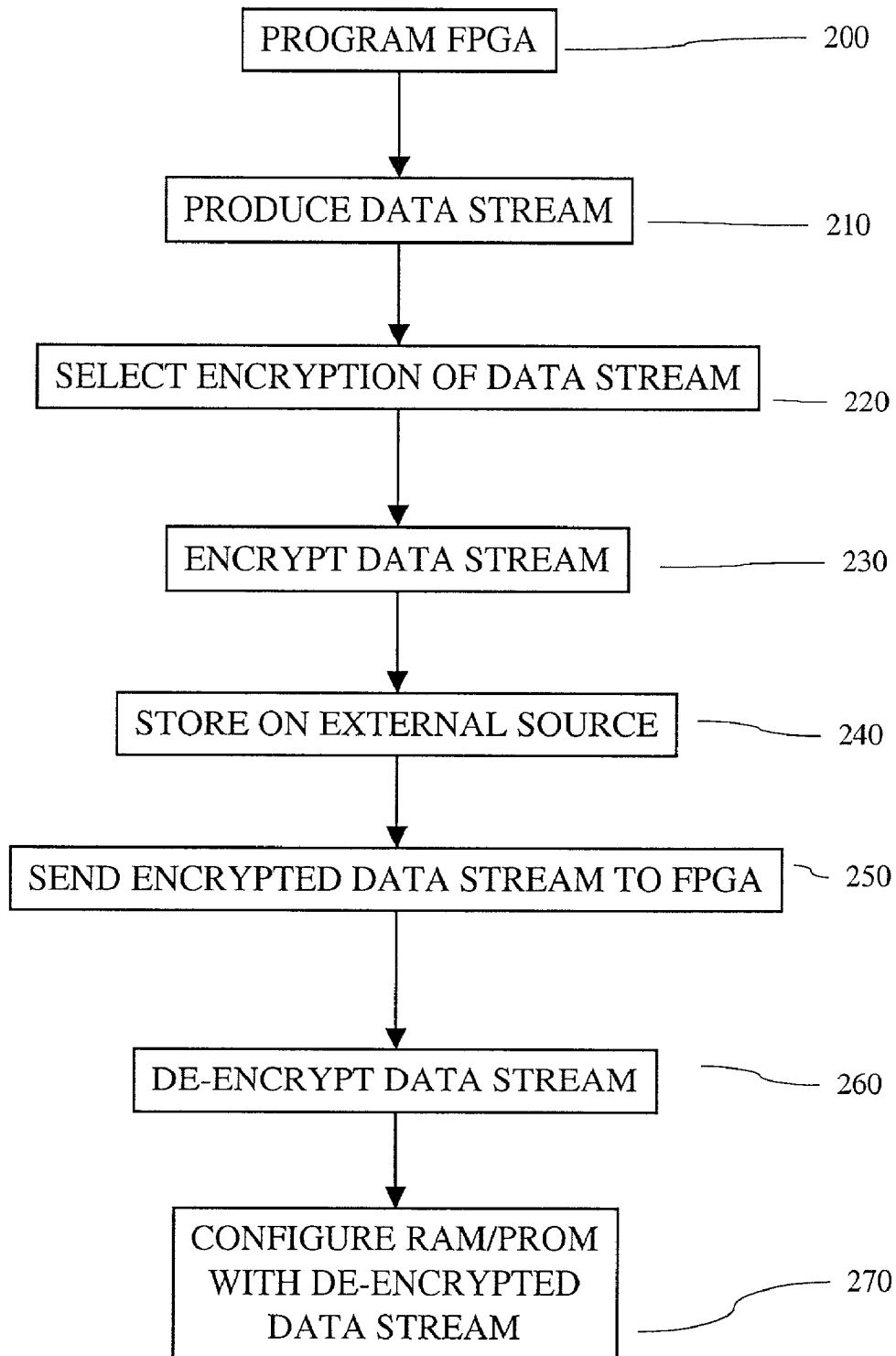


FIG. 2

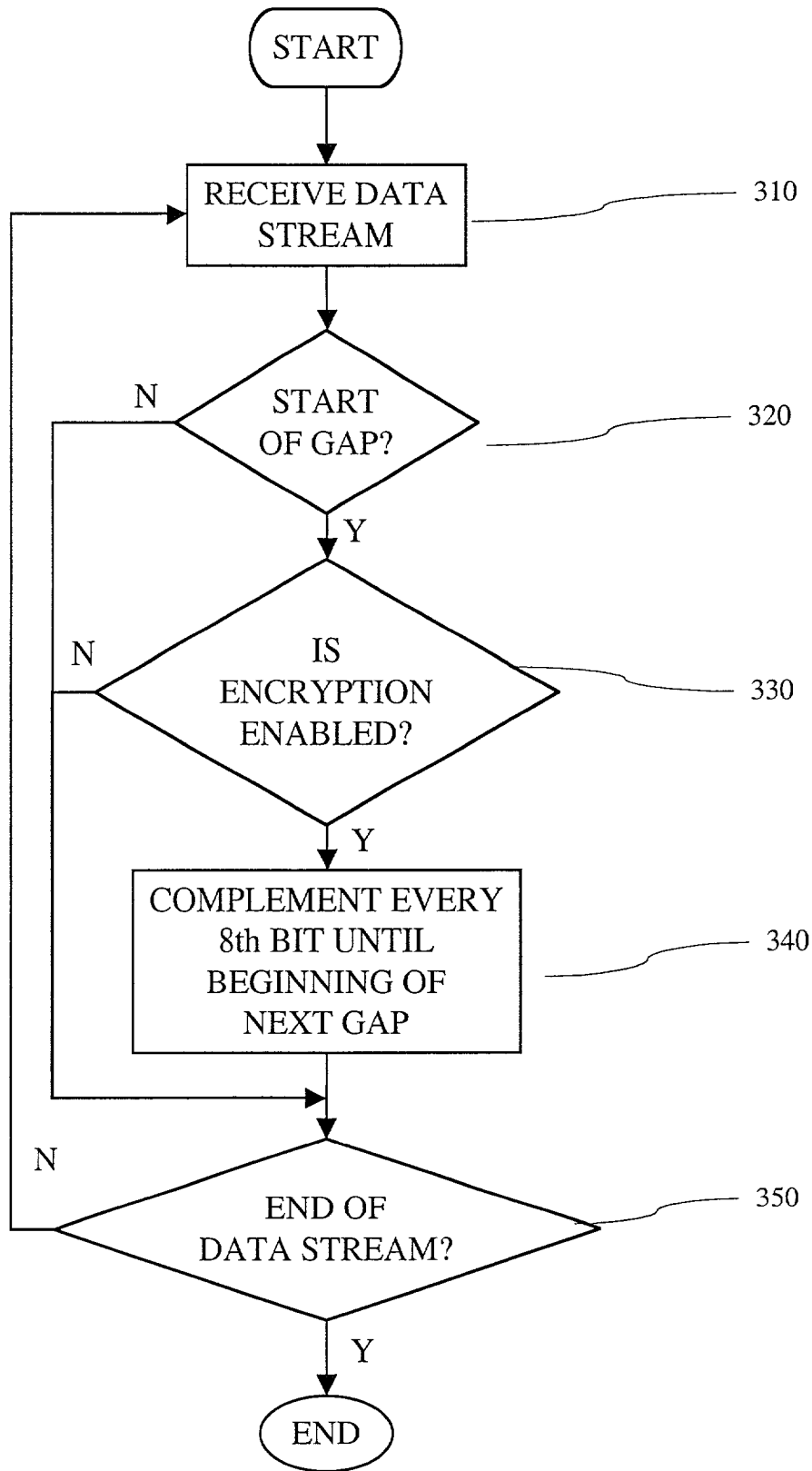


FIG. 3

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