

## (12) United States Patent Wong

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

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- Field of Classification Search ............. 716/16–17; 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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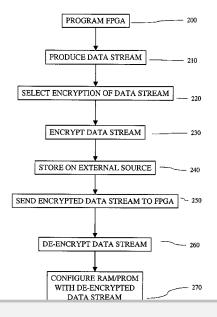
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#### **ABSTRACT**

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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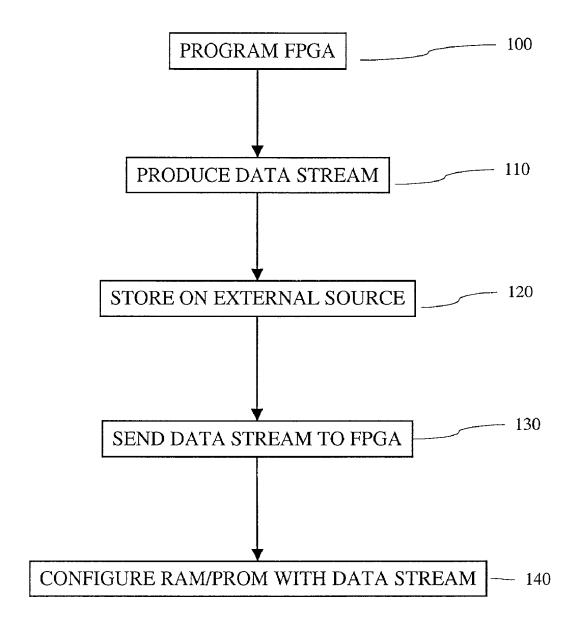
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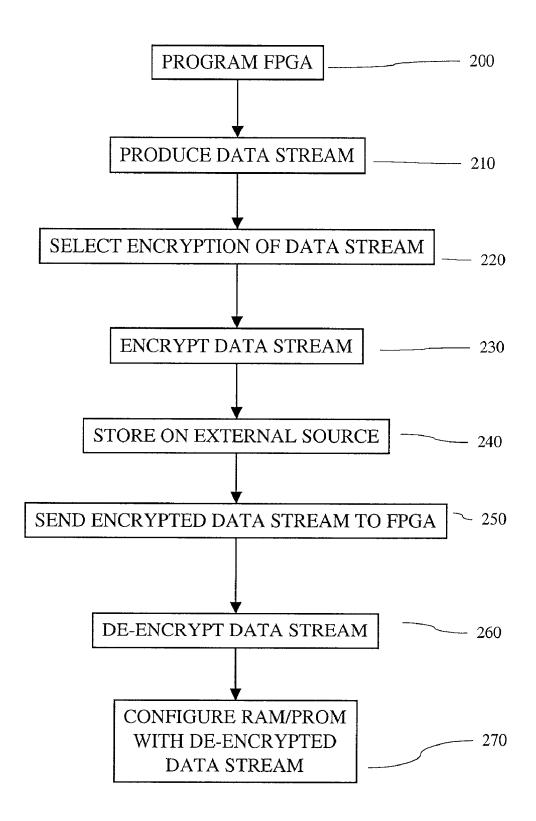


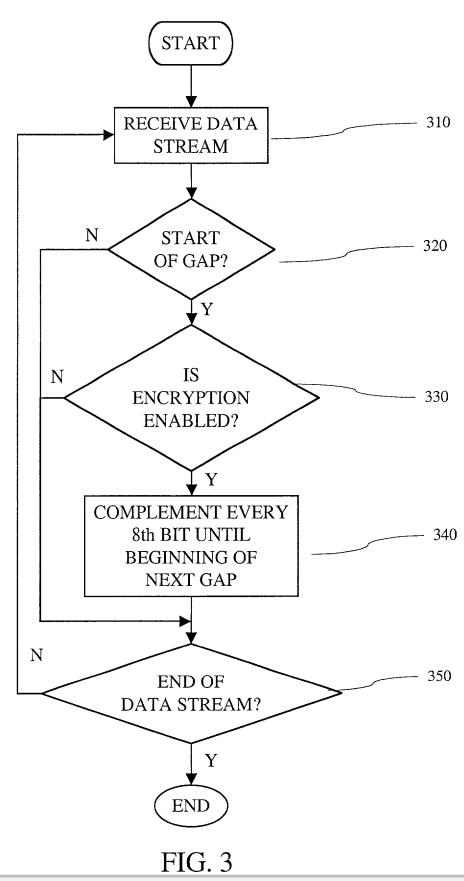


PRIOR ART

FIG. 1







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