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(19) **United States**(12) **Patent Application Publication** (10) **Pub. No.: US 2022/0407504 A1**
(43) **Pub. Date: Dec. 22, 2022**(54) **FLIP-FLOP CIRCUIT INCLUDING
CONTROL SIGNAL GENERATION CIRCUIT**(52) **U.S. Cl.**
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LTD.**, Suwon-si (KR)(21) Appl. No.: **17/843,585**(22) Filed: **Jun. 17, 2022**(30) **Foreign Application Priority Data**

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H03K 19/20 (2006.01)(57) **ABSTRACT**

A flip-flop circuit includes a first master latch circuit transmitting an inverted signal of an input signal received from an external device to a first node and transmitting an inverted signal of a signal of the first node to a second node, according to a first control signal having a first logic level or a second control signal having a second logic level, a first slave latch circuit transmitting an inverted signal of a signal of the second node to a third node according to the first control signal having the second logic level or the second control signal having the first logic level, a first output inverter generating a first output signal by inverting a signal of the third node, and a first control signal generation circuit generating the first control signal and the second control signal based on a clock signal and the signal of the first node.

