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WU(10) **Pub. No.: US 2022/0376692 A1**(43) **Pub. Date: Nov. 24, 2022**(54) **OFF CHIP DRIVER CIRCUIT, OFF CHIP DRIVER SYSTEM, AND METHOD FOR OPERATING AN OFF CHIP DRIVER CIRCUIT**(71) Applicant: **NANYA TECHNOLOGY CORPORATION**, New Taipei City (TW)(72) Inventor: **Chang-Ting WU**, Hsinchu County (TW)(21) Appl. No.: **17/327,764**(22) Filed: **May 24, 2021****Publication Classification**(51) **Int. Cl.**
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CPC ... **H03K 19/0005** (2013.01); **H03K 19/01742** (2013.01)(57) **ABSTRACT**

An off chip driver circuit includes a pull-up circuit and a pull-down circuit. The pull-up circuit includes several first transistors and a first resistance circuit coupled between the first transistors and a input/output pad. The first transistors generate a first voltage to the first resistance circuit. The first resistance circuit transmits, in response to a first control signal, the first voltage to the input/output pad and to have a variable resistance according to the first control signal. The pull-down circuit includes several second transistors and a second resistance circuit coupled between the second transistors and the input/output pad. The second transistors generate a second voltage to the second resistance circuit. The second resistance circuit transmits, in response to a second control signal, the second voltage to the input/output pad and to have a variable resistance according to the second control signal.

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