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**CRETU et al.**(10) **Pub. No.: US 2022/0407513 A1**(43) **Pub. Date: Dec. 22, 2022**(54) **SAMPLING SWITCH CIRCUITS**(71) Applicant: **SOCIONEXT INC**, Kanagawa (JP)(72) Inventors: **Vlad CRETU**, Maidenhead (GB);  
**Masahiro KUDO**, Maidenhead (GB)(21) Appl. No.: **17/834,653**(22) Filed: **Jun. 7, 2022**(30) **Foreign Application Priority Data**

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**ABSTRACT**

A sampling switch circuit, including an input node, which receives an input voltage signal to be sampled, a sampling transistor having gate, source and drain terminals, the source terminal connected to the input node, a capacitor, a current source configured to cause a defined current to flow there-through and switching circuitry configured to alternate between a precharge configuration and an output configuration depending upon a clock signal. In the precharge configuration, the switching circuitry connects the capacitor into a current path between said current source and a first voltage reference node to form a potential difference across the capacitor which is dependent on the defined current. In the output configuration, the switching circuitry connects the capacitor between a second voltage reference node and the gate terminal of the sampling transistor so that a voltage level applied at the gate terminal of the sampling transistor is dependent on the defined current.

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