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(19) **United States**(12) **Patent Application Publication****Dixith et al.**(10) **Pub. No.: US 2024/0223146 A1**(43) **Pub. Date:****Jul. 4, 2024**(54) **AMPLIFIER WITH ADJUSTABLE INPUT  
AND FEEDBACK RESISTANCE**(52) **U.S. Cl.**CPC ..... **H03G 3/30** (2013.01); **H03F 3/45475**  
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**ABSTRACT**

A programmable gain amplifier (PGA) circuit for adjusting a signal gain between a signal input and a signal output can include a differential-input amplifier which can include a first input node, a second input node, and a first output node, where the differential-input amplifier can be configured to amplify a difference in signal level between the first input node and the second input node for being provided on the first output node. The PGA circuit can also include a first configurable input impedance circuit, which can be arranged between a first signal input node and the first input node, which can be configured to provide a first specified input impedance value. The PGA circuit can also include a first configurable feedback impedance circuit, which can be arranged between a first signal output node and the first input node, which can be configured to provide a first specified feedback impedance value.

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