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(54) SWITCHED CAPACITOR AMPLIFYING APPARATUS AND METHOD HAVING GAIN ADJUSTMENT MECHANISM

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(57) **ABSTRACT**

The present invention discloses a switched capacitor amplifying apparatus having gain adjustment mechanism. An amplifier includes an input terminal and an output terminal. A capacitor circuit includes a sampling capacitor circuit, a load capacitor and a level-shifting capacitor array. The sampling capacitor circuit includes two sampling input terminals and a sampling output terminal to receive an input signal from a signal input terminal and output a sampled result to the input terminal of the amplifier. The load capacitor and the level-shifting capacitor array are charged according to the output terminal of the amplifier and the load capacitor is subsequently charged by the level-shifting capacitor array to accomplish level-shifting such that the load capacitor generates an output signal through a signal output terminal. A control circuit determines an enabling combination of level-shifting capacitors included in the level-shifting capacitor array to determine an equivalent capacitance, to further determine a loop gain.

