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(54) **NESTED DELTA-SIGMA
ANALOG-TO-DIGITAL CONVERSION
SYSTEM AND METHOD**

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(57) **ABSTRACT**

A nested Δ - Σ analog-to-digital conversion system and method, comprising: an analog filter, an analog comparator, a first feedback digital-to-analog converter (DAC), a second feedback DAC placed in front of the first feedback DAC, and a digital filter and an MSB quantizer placed at the output of the analog comparator; wherein the input of the first feedback DAC is connected to the output of the analog comparator; the analog filter, the analog comparator, and the first feedback DAC form an internal analog Δ - Σ loop; the input of the second feedback DAC is connected to the output of the MSB quantizer; the output of the second feedback DAC is connected to the output of the first feedback DAC and to the input of the analog filter; and the second feedback DAC, the internal analog Δ - Σ loop, the digital filter, and the MSB quantizer form an external hybrid Δ - Σ loop.

