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(43) **Pub. Date: Dec. 22, 2022**(54) **DIRECT DIGITAL SYNTHESIZER WITH
FREQUENCY CORRECTION**(52) **U.S. Cl.**
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Nashua, NH (US)(57) **ABSTRACT**(72) Inventors: **Shailendra Srinivas**, Nashua, NH (US);
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A direct digital synthesizer (DDS) circuit. The circuit includes a first input to receive a first fixed frequency clock signal having a first frequency, a second input to receive a second fixed frequency clock signal having a second frequency lower than the first frequency, and an output to provide an output frequency that is based at least in part on a frequency control word (FCW). The DDS circuit may include a frequency correction circuit having a first input to receive the first clock signal, a second input to receive the second clock signal, and a third input to receive the FCW, and an output to provide a frequency error of the first clock signal, the frequency error determined using the second clock signal and FCW. Alternatively, or in addition to, the DDS circuit may include an all-digital phase lock loop to correct for frequency wander of the first clock signal.

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Sampling Clock

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