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(19) **United States**(12) **Patent Application Publication**  
**Brandonisio et al.**(10) **Pub. No.: US 2022/0416798 A1**(43) **Pub. Date: Dec. 29, 2022**(54) **FREQUENCY GENERATION WITH  
DYNAMIC SWITCHING BETWEEN  
CLOSED-LOOP OPERATION AND  
OPEN-LOOP OPERATION**(52) **U.S. Cl.**CPC ..... **H03L 7/1976** (2013.01); **H03L 7/0992**  
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(57)

**ABSTRACT**

Some examples relate to a frequency synthesizer. The frequency synthesizer includes an oscillator including an input terminal and an output terminal. A frequency locked-loop or phase-locked loop (FLL/PLL) unit is arranged on a feedback path extending between the output terminal of the oscillator and the input terminal of the oscillator. A switching unit is configured to selectively switch between a first mode of operation in which the feedback path is closed and the FLL/PLL unit is coupled to the input terminal of the oscillator, and a second mode of operation in which the feedback path is open and a ramping unit is coupled to the input terminal of the oscillator while the feedback path is open.

