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(19) **United States**(12) **Patent Application Publication****Lin et al.**(10) **Pub. No.: US 2023/0231564 A1**(43) **Pub. Date:****Jul. 20, 2023**(54) **TRANSCIVER CIRCUIT AND CONTROL METHOD OF FREQUENCY SYNTHESIZER**(52) **U.S. Cl.****CPC H03L 7/18 (2013.01); H04B 1/40 (2013.01)**(71) Applicant: **Realtek Semiconductor Corp.,**
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The present invention provides a transceiver circuit including a transmitter circuit, a frequency synthesizer and control circuit. The transmitter circuit is configured to generate a transmission signal, wherein the transmission signal is transmitted through an antenna. The frequency synthesizer is configured to generate a clock signal for the transmitter circuit to generate the transmission signal. The control circuit is configured to generate a first control signal to control the frequency synthesizer to determine a loop bandwidth of the frequency synthesizer; wherein when the transceiver circuit operates in a standby mode, the control circuit generates the first control signal to make the frequency synthesizer have a first loop bandwidth; and after a period of time after the transceiver circuit is switched from the standby mode to a transmission mode, the control circuit generates the first control signal to make the frequency synthesizer have a second loop bandwidth.

