

عنوان مقاله:

A Ring-Type ILFD with Locking Range of 91% for Divide-by-4 and 40% for Divide-by-8 with Quadrature Outputs

محل انتشار:

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نویسندگان:

Najmeh Hajamini - Amirkabir University of Technology, Tehran, Iran

Mohammad Yavari

خلاصه مقاله:

In this paper, a low-power, wide locking range and quadrature output divide-by-4 and divide-by-8 ring-type injection-locked frequency divider (ILFD) is proposed. Two techniques are implemented in a two-stage ring ILFD to provide wide locking range and low power consumption at the same time. To widen the bandwidth, a common-gate tail configuration for injecting the signal is employed. Furthermore, the common-source node sharing topology is used to increase the operating frequency of the ILFD. This ILFD is designed in a 90 nm CMOS technology. Simulation results show that the proposed ILFD can provide the locking range of 91% for divide-by-4 and 40% for divide-by-8 at the incident power of -5 dBm and -10 dBm, respectively. It consumes about 1.57 mW at a supply voltage of 1.2 V

کلمات کلیدی:

divide-by-4, divide-by-8, Injection locked frequency divider (ILFD), locking range, ring oscillator

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