The oscillator uses MEMS resonator as its frequency selective tank, there will be oscillate if the loop gain \( L(j\omega) \) at \( \omega_o \) matched the Barkhausen’s Criteria.

We applied a adjustable pulse width unit to replace S-counter, that has the same performance and more simple than the traditional PSC.

The anchors of Lamé mode resonator move away from main structure, different from C-C Beam, that suppresses energy loss through them.

The loss of inductor was compensated by cross-couple pairs, the wide tune and the fine tune were controlled through \( V_b \) and \( V_c \), respectively.

Our CP has high linearity. The dead zone, PFD+Charge Pump, had eliminated.

The type-IV PFD, we chosen that because of its detecting range covers \( \pm 2\pi \).

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