Abstracts

Octave tunable, highly linear, RC-ring oscillator with differential fine-coarse tuning, quadrature outputs and amplitude control for fiber optic transceivers (2002 Vol. I [MWSYM])

M.A.T. Sanduleanu, D. van Goor and H. Veenstra. "Octave tunable, highly linear, RC-ring oscillator with differential fine-coarse tuning, quadrature outputs and amplitude control for fiber optic transceivers (2002 Vol. I [MWSYM])." 2002 MTT-S International Microwave Symposium Digest 02.1 (2002 Vol. I [MWSYM]): 545-548 vol.1.

This paper presents a low-voltage, RC-ring oscillator for fiber optic transceivers (SDH/SONET applications). It has one octave coarse tuning range, differential tuning inputs, quadrature outputs and a linear fine-control. A replica biasing circuit regulates the common-mode voltage and the amplitude at the output. The oscillator has been realized in a pre-production 70GHz f/sub T/, SiGe, BiCMOS process (QUBIC4G). The tuning range covered with process and temperature variations is 3.4GHz-6.8GHz. At 6.6GHz oscillation frequency the measured phase noise is -92dBc/Hz @ 3MHz offset from the carrier. The typical power consumption of the VCO core is 80mW from a 2.5V power supply and the area is 0.3mm/sup 2/.

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