

45 GHz highly integrated phase-locked loop frequency synthesizer in SiGe bipolar technology

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This paper presents a highly integrated 45 GHz phase-locked loop frequency synthesizer. The monolithic circuit consists of a voltage-controlled oscillator with frequency doubler and divide-by-16 static frequency divider and is manufactured in a pre-production low-cost 0.4 μm /85 GHz SiGe bipolar technology. The power consumption is 650 mW from the 5 V supply. External synthesizer building blocks are a commercially available PLL-IC, a passive loop filter, and a reference oscillator.

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