

Low supply voltage high efficiency MMIC oscillator at C-band

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A monolithically integrated voltage controlled class-E oscillator for the C-band has been designed. The oscillator is optimized for high efficiency at ultra low supply voltages down to 0.9 V. The range of the tuning voltage is from 0 to the supply voltage. With a supply voltage of 1.8 V, an output power of 6.5 dBm, an efficiency of 43%, and a tuning range of 150 MHz is achieved at a center frequency of 4.42 GHz. With a supply voltage of only 0.9 V, the efficiency is still 36%, with an output power of 1.1 dBm, and a tuning range of 80 MHz at a frequency of 3.63 GHz.

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