

A wideband voltage-tunable dielectric resonator oscillator controlled by a piezoelectric transducer

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A new voltage-controlled dielectric resonator oscillator (VCDRO) is described. A piezoelectric transducer (PET) is used to vary the oscillation frequency by perturbing the electromagnetic fields of the DR. The measured frequency tuning is from -2.0 to +1.7% about the center frequency of 11.78 GHz. The tuning bandwidth is slightly less than that of a mechanical tuning using a micrometer-head controlled tunable DRO with a tuning range of -3.1 to +1.6%. To our knowledge, this is the largest electronic tuning range reported to date for a VCDRO.

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