

## 4GHz Miniaturized Low Noise Dielectric Resonator Stabilized Oscillator

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A 4GHz Miniaturized Oscillator has been developed. It consists of a 17GHz (17.84GHz) DRO and a divide-by-four analog frequency divider. The 17GHz DRO uses a HEMT with series feedback. The frequency divider was built, based on the concept of an injection locking oscillator using a bipolar transistor. The circuit provides excellent phase noise of - 120dBc/Hz at 100kHz offset from the carrier and good temperature stability of +/- 150KHz over the temperature range - 20°C to +80°C. The circuit size is about 1/8 that of a conventional 4.46GHz DRO.

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