Abstracts

A dielectric resonator balanced second harmonic quasi-optical self oscillating mixer for 60 GHz applications

M. Sironen, Yongxi Qian and T. Itoh. "A dielectric resonator balanced second harmonic quasi-optical self oscillating mixer for 60 GHz applications." 1999 MTT-S International Microwave Symposium Digest 99.1 (1999 Vol. I [MWSYM]): 139-142 vol.1.

A dielectric resonator balanced second harmonic quasi-optical self oscillating mixer is demonstrated for the first time. Dielectric resonator coupled HEMT devices were used to generate the signal for the second harmonic mixing. A patch antenna and directional couplers were used to feed the RF. The circuit exhibits a conversion loss of 22 dB from 59.4 to 60.4 GHz, radiation leakage of -34 dBm at 60 GHz, and IF phase noise of -68 dBc/Hz at 10 kHz offset.

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