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Title:Terahertz detection by a homodyne field effect transistor multiplicative mixer
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Abstract:We demonstrate an efficient scheme for mixing and down-conversion of two orthogonally polarized terahertz beams in a field effect transistor at frequencies far above frequencies where the transistor has gain. One signal is applied between gate and source and the other between drain and source. The mixer is a field detector with 960 pW/Hz noise-equivalent power at a local oscillator (LO) power of 8 μW . Orthogonal LO and signal power allows for simple diplexing.
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Inspec controlled terms:field effect transistors - homodyne detection - mixers (circuits) - mixing - oscillators - terahertz wave detectors
Uncontrolled terms:terahertz detection - homodyne field effect transistor multiplicative mixer - mixing - down conversion - orthogonally polarized terahertz beams - noise-equivalent power - local oscillator power - signal power - diplexing
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