Abstracts

W-band GaAs Gunn Diode Harmonic Power Combiners

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In this paper the combination of second harmonic power from multiple GaAs Gunn oscillators at W-band was investigated. The power combiner operating in a subharmonic tie involves two or three GaAs Gunn oscillators connected together by a 3 dB short-slot coupler. In two-oscillator combiners the second harmonic power of individual oscillator is 16 mW and 15 mW respectively. The combined power at 91.5 GHz is 23mW. In three- oscillator combiners the second harmonic power of individual oscillator is 7 mW, 7 mW, and 6 mW respectively. The combined power at 92 GHz is 14.5 mW. In both cases the combining efficiency is greater than 70 %.

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