# Abstracts

## A DC to X-band frequency doubler using GaAs HBT MMIC

*Xiangdong Zhang and Yong-Hoon Yun. "A DC to X-band frequency doubler using GaAs HBT MMIC." 1997 MTT-S International Microwave Symposium Digest 3. (1997 Vol. III [MWSYM]): 1213-1216.*

An analog frequency doubler is developed using GaAs HBT MMIC technology. In this doubler circuit, a novel push-push circuit configuration is used to provide the efficient frequency conversion and the fundamental frequency rejection over a broad bandwidth. The measurement results of the MMIC demonstrate an average 0 to 3 dB conversion gain and a 10 dB rejection on fundamental frequency up to 14 GHz. Thus, this MMIC can be used as a low-cost insertion block to achieve any stable local-oscillation signals up to X-band by multiplying the high quality VCOs at low frequencies, especially the inexpensive Si BJT based VCOs at wireless frequencies.

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