

**Tao Zhang, Subramanian V., Ali M.K., and Boeck G.,
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Abstract: Two low-loss K-Band passive down-conversion CMOS mixers have been designed, fabricated and tested in a 0.13 μm CMOS process. The mixers are based on a quadrature and single channel architectures. The quadrature mixer is integrated with a polyphase quadrature filter, while the single channel mixer type is integrated with a transformer balun. The design considerations of the transformer balun and polyphase filter to minimize the insertion loss and required LO power are presented. The characterized mixer results compare the state-of-the-art realizations in the frequency band.