Abstracts

Implementation of RF/Microwave Receiver Components on a Semi-Custom Silicon Bipolar Array

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The analog transistor array starCHIP/sup tm/-1 has been developed for rapid, cost-effective design and delivery of many RF/microwave components for applications to 5 GHz. The array is based on silicon bipolar devices with 10 GHz f/sub T/ and 20 GHz f/sub max/ and thin-film polysilicon resistors with low parasitic capacitance and excellent matching. This paper presents an overview of the array topology and technology. The implementation of receiver functions and their measured results is also illustrated with a frequency doubler, a vector demodulator, a limiting amplifier and a phase detector with on-chip VCO. All these components are wideband, require no external balums, have 50 Omega input and output impedance matching, and operate from a single 5 V power supply.

❑ Return to main document.