

An analog baseband chain for a UMTS zero-IF receiver in a 75 GHz SiGe BiCMOS technology (2002 Vol. I [MWSYM])

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A zero-IF receiver for UMTS realized by using an advanced 0.35 μm SiGe BiCMOS process with 75 GHz transit frequency is presented. The focal point is the analog baseband chain consisting of a low-noise buffer (LNB), a fully integrated channel selection filter, programmable gain amplifiers (PGA) and circuits to reduce the effects of DC-offsets. The whole chain is able to provide a voltage gain from -14 dB up to 50 dB in 1 dB steps and 43 dB adjacent channel selectivity. The total receiver current consumption for a supply voltage of 2.7 V is less than 45 mA, whereby the baseband chain consumes 15 mA.

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