

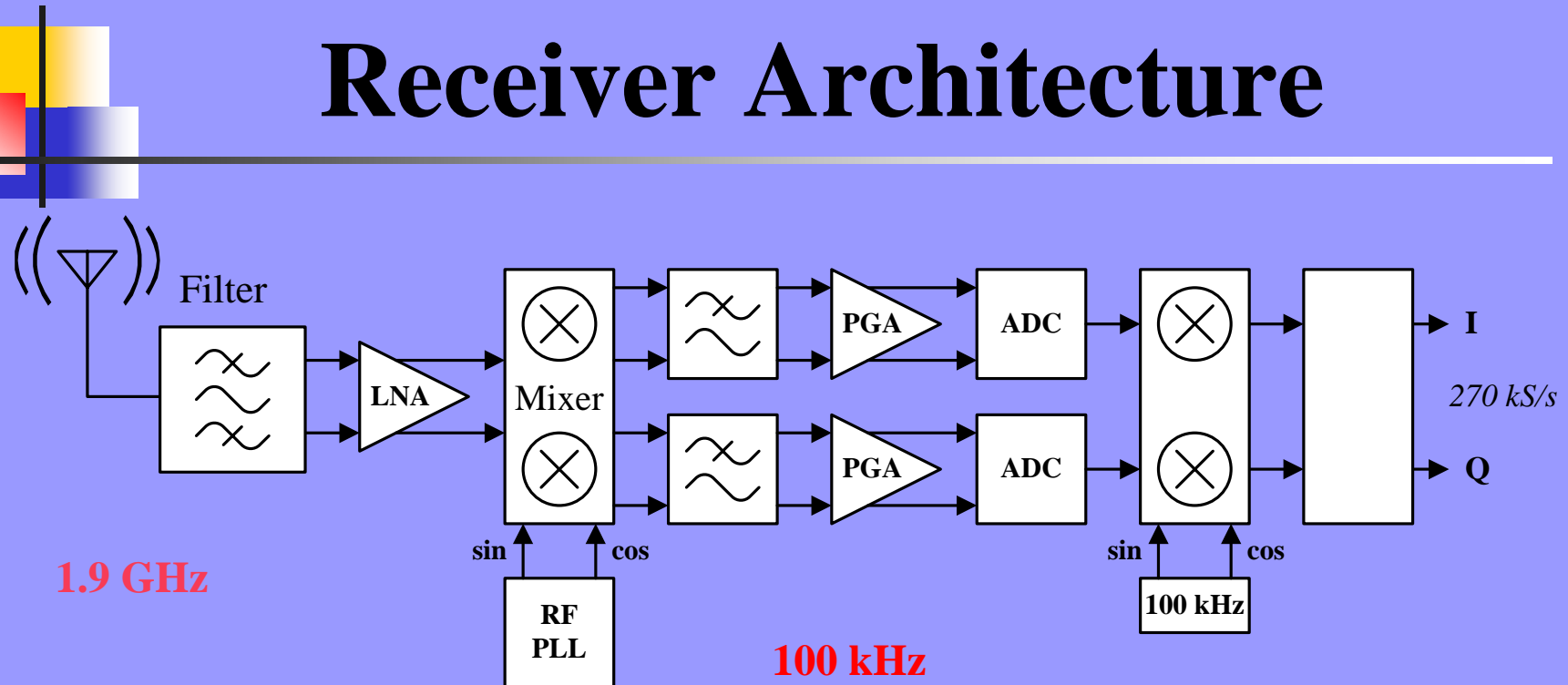
An Implementation of a CMOS Down-Conversion Mixer for GSM1900 Receiver

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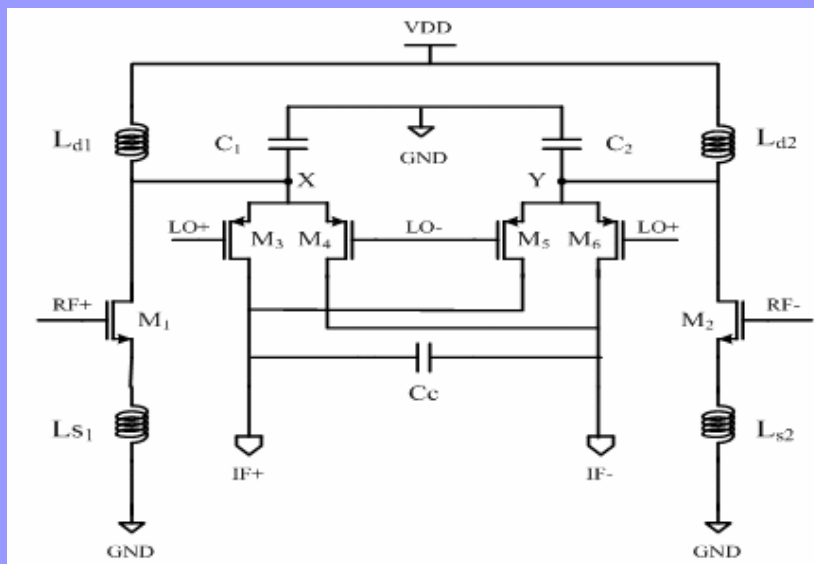
Paper ID: 1D-6

Receiver Architecture

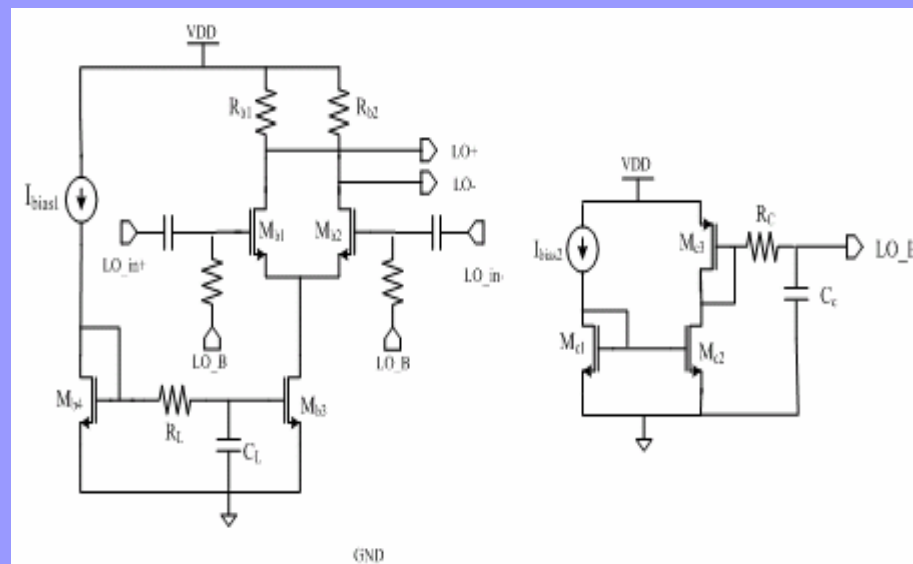


Low-IF Receiver Topology

Circuit Design



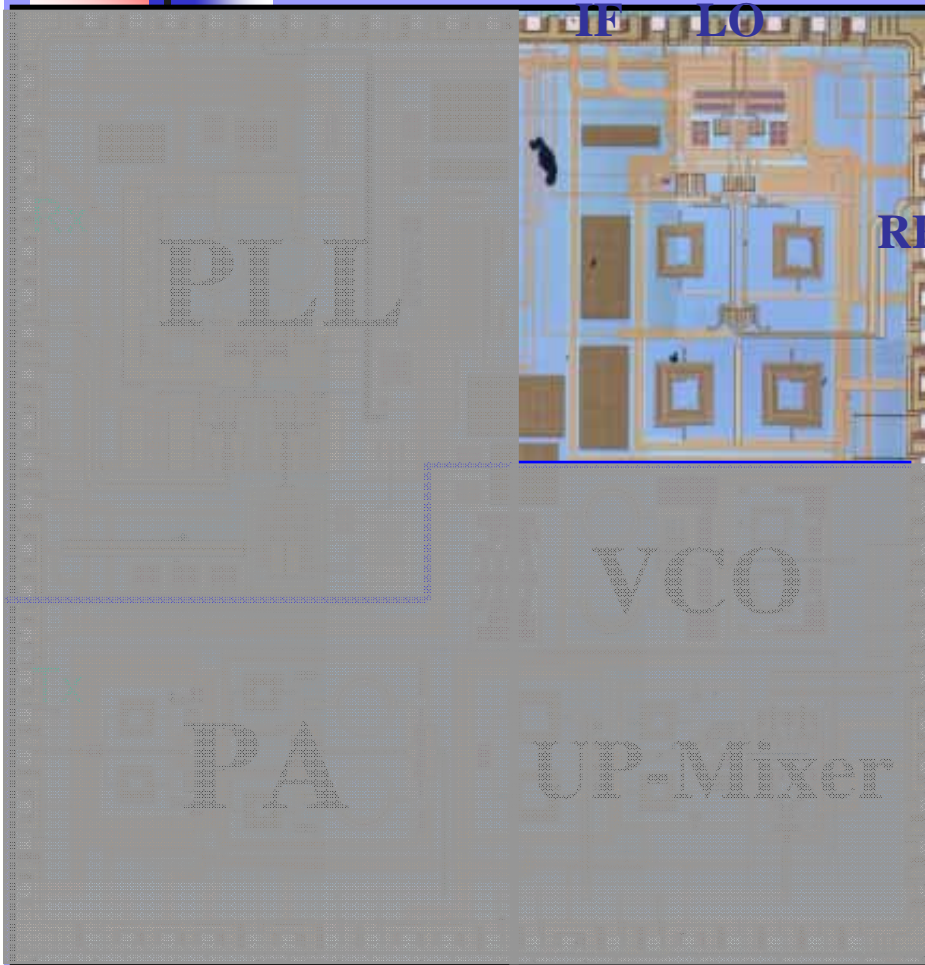
Core circuit



LO buffer and Bias Circuit

Mixer Die

Performance Summary

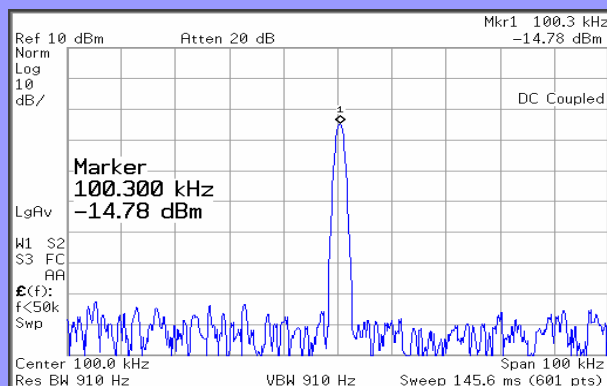


Mixer	Measured Parameters
Supply voltage	3.3V
Current dissipation	7mA
RF frequency	1900MHz
LO frequency	1900.1MHz
SSB (Noise Figure)	18.5dB
Power Conversion Gain	6dB
Input IP3	11.5dBm
Input P- 1dB	1.5dBm
LO-RF feed-through	-53dB
LO-IF feed-through	-48dB

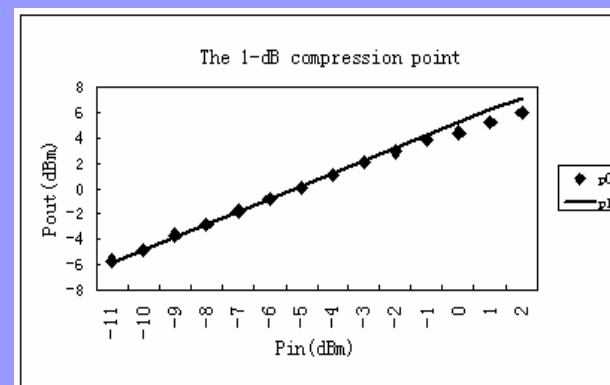
Performance (Cont.)

Mixer output spectrum

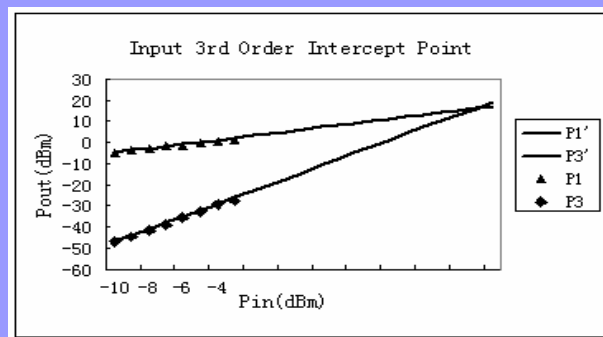
(RF:-20dBm/1900MHz ;LO: 4dBm/1900.1MHz)



P1dB Compression Point



IIP3 of Mixer



CG v.s. LO Power

