Research Topics in 2012

5-GHz CMOS Integrated Radio-Over-Fiber Receiver

60-GHz BiCMOS Fully Integrated Remote Antenna Unit

60-GHz High-Linear Micromixer (work at IHP)

Low-Q Inductive Link for Biomedical Implants (collaboration with D. Kim)

< Publication & Award >

- Silicon Photonics-Wireless Interface IC for 60-GHz Wireless Link, IEEE PTL, July 2012
- A 5-GHz CMOS Integrated Radio-Over-Fiber Receiver, APMP 2013, Submitted
- Investigation of Optimal Silicon Avalanche Photodiode Pairs for 60-GHz Balanced Subharmonic Optoelectronic Mixers, APMP, April 2012
- Special Prize, The 13th Korea Semiconductor Design Contest, December 2012

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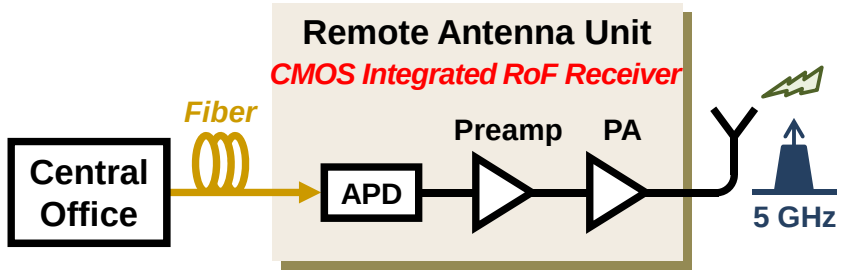
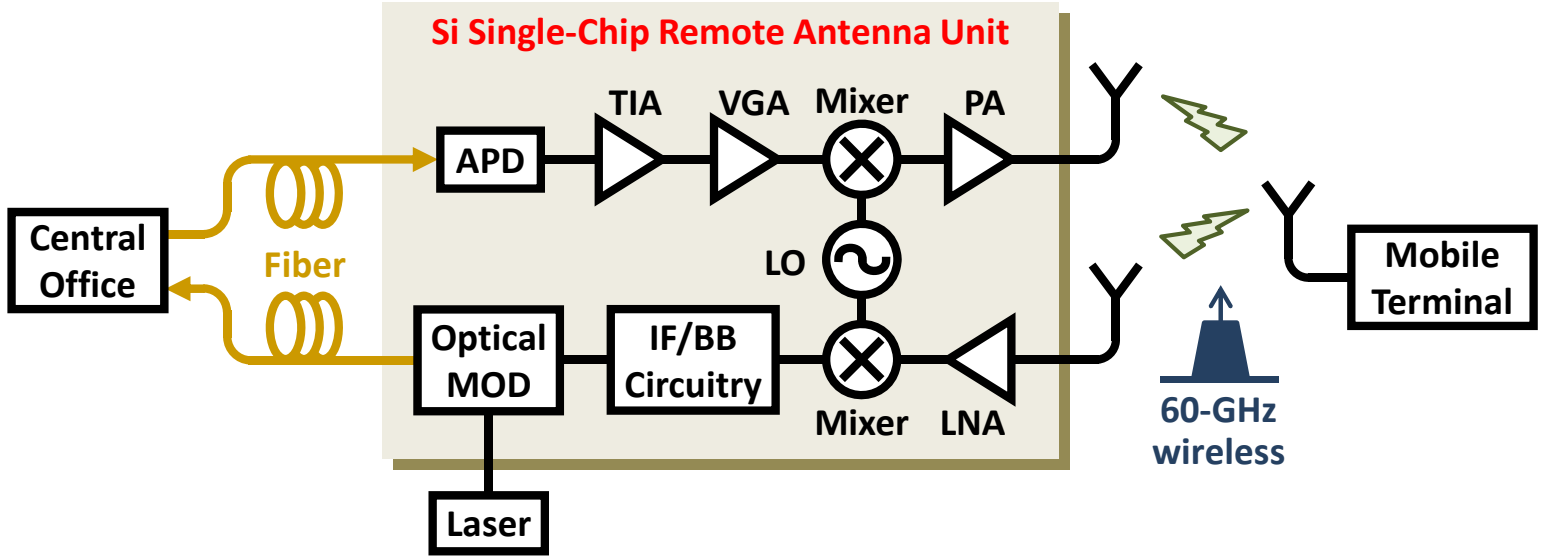
Silicon Photonics-Wireless ICs

- 5-GHz CMOS Integrated Radio-Over-Fiber Receiver



- 60-GHz BiCMOS Fully Integrated Remote Antenna Unit



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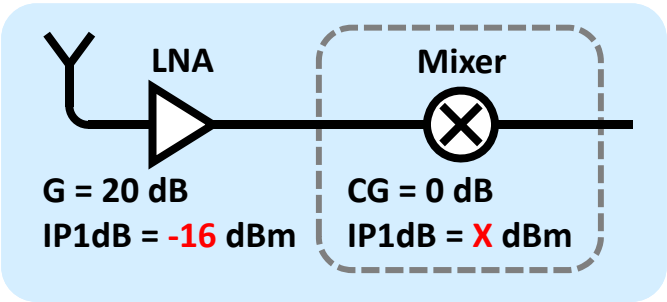
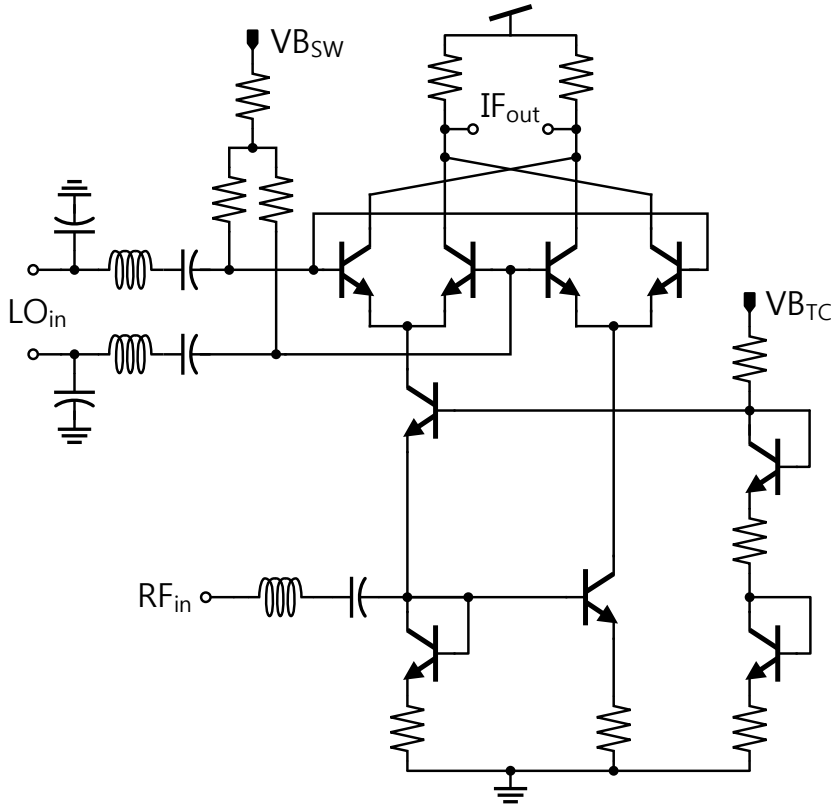
High-Linear mmW Micromixer

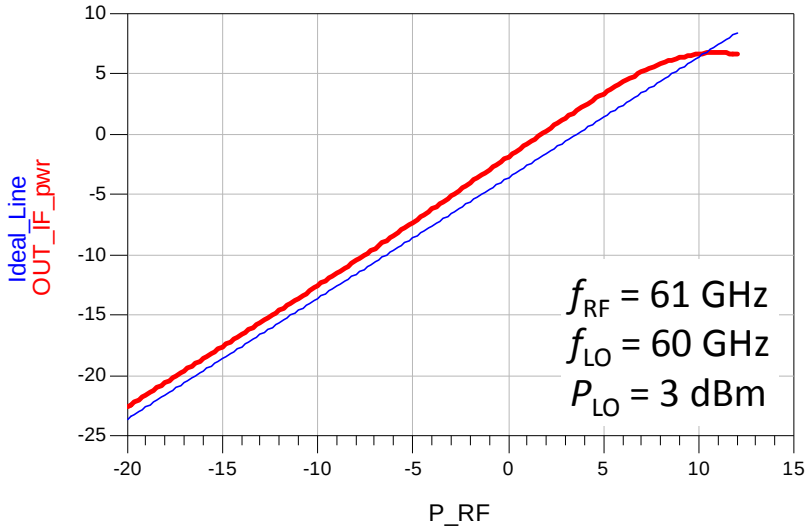
mmW Radar Rx



Mixer IP1dB	Overall IP1dB
0 dBm	-21.5 dBm
5 dBm	-18.5 dBm
10 dBm	**-17 dBm**



- Technology: IHP SG13S (f_T/f_{max} = 250/300 GHz)
- Class-AB operation for high linearity
- Simulated IP1dB: 10.4 dBm



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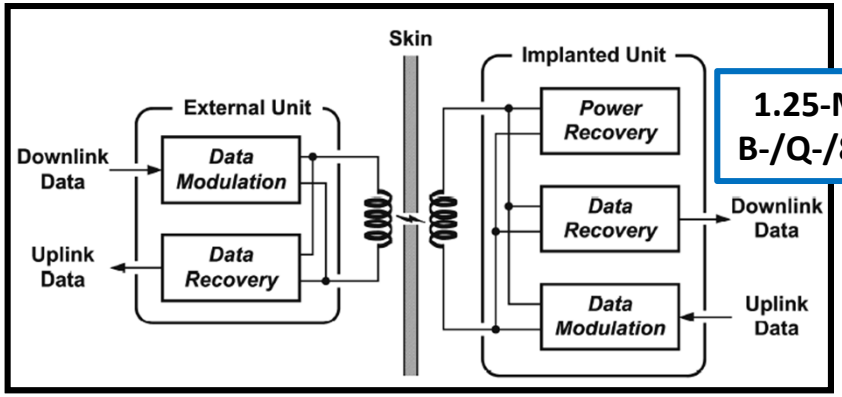
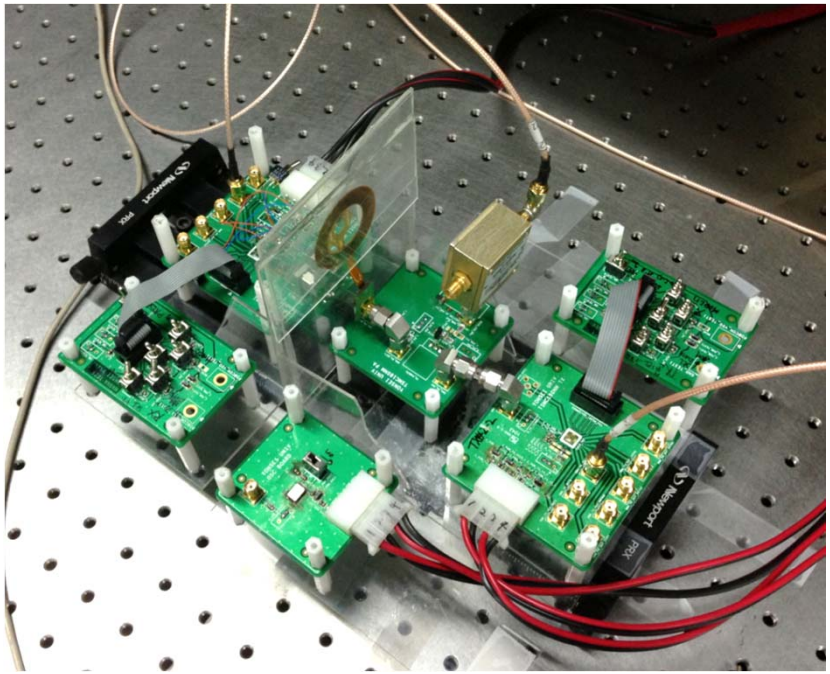
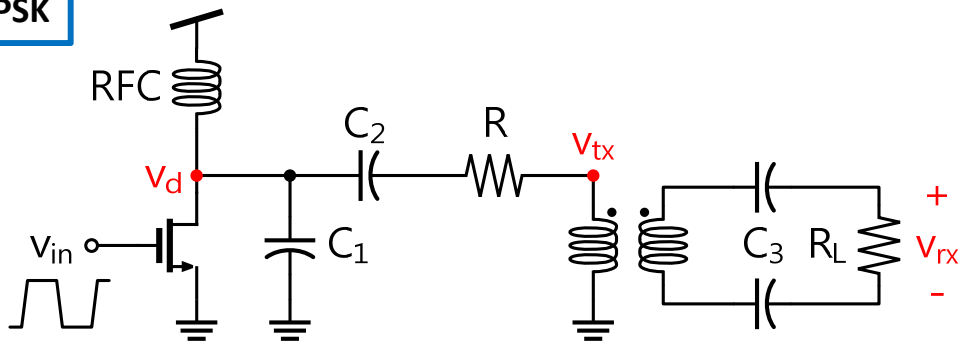
Inductive Link for Biomedical Implants

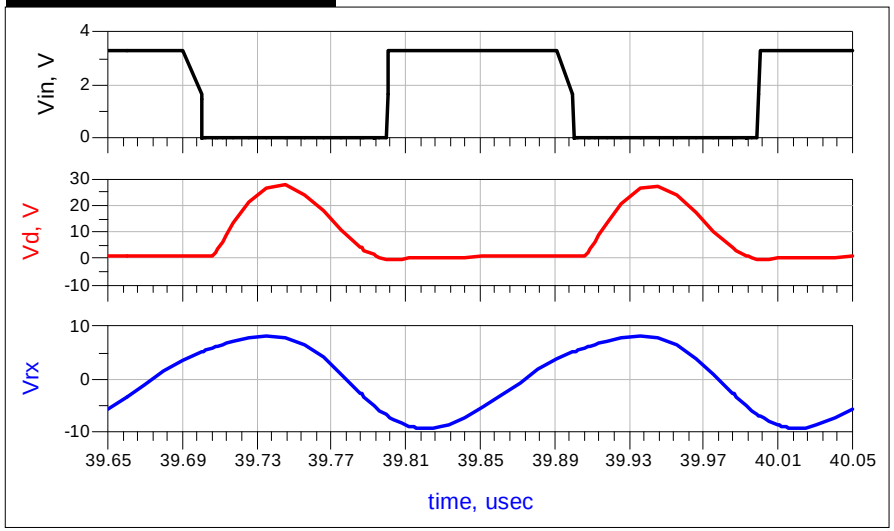




- 5-MHz Inductive Link Utilizing Class-E Power Amplifier and a Pair of Coils



Simulation Results



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