

Analog Rump Session
Symposium on VLSI Circuits
(June 2005)

Digitizing the Radio to the Antenna ?
Will Radios Still Need Analog in 2010 ?

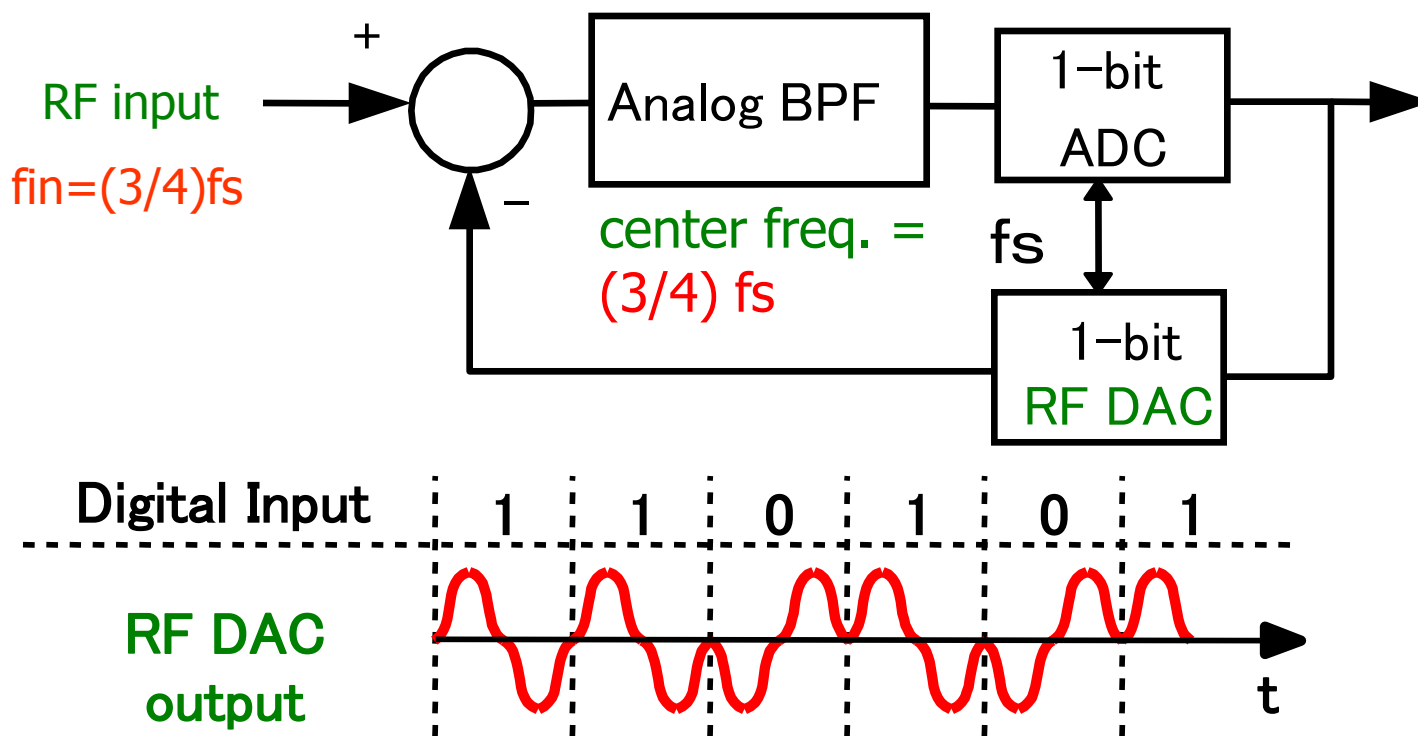
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Direct RF signal digitization will be possible by a continuous-time bandpass delta-Sigma ADC

Radio Frequency DAC inside a modulator

- Subsampling
- Insensitive to Jitter
- Relaxed anti-aliasing filter
- LOs, mixers → omitted

To be presented at
Advanced AD/DA conference
in July 2005.



Digital-assisted analog technology

(Analog performance improvement supported by digital technology)

- Just “RF circuit technology” is not enough.
- In SOC, powerful CPUs are available.
- The first chip should work.
- CMOS scaling generation independent system is desirable.

Digital calibration and dynamic element matching techniques will realize digital-rich analog-minimum radio system.

Signal processing and control theory people are from Jupiter.