

## A Power-Efficient Noise Canceling Technique Using Signal-Suppression Feed-forward for Wideband LNAs

Daiki Oki, S. Kawauchi, C. Li, M. Kamiyama, **S. Banba**  
**T. Dan, N. Takahashi, H. Kobayashi, N. Takai**

Electronic Engineering Department, Gunma University, *Sanyo Semiconductor*

### Research Objective

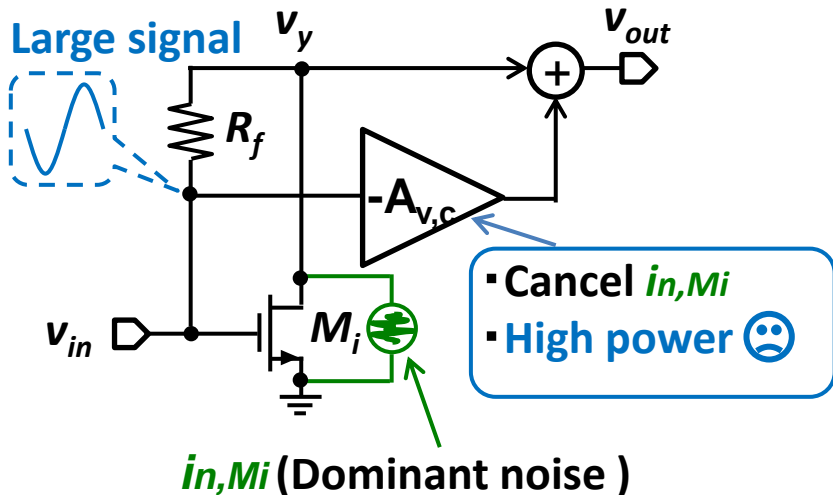
Low Noise Amplifier (always working in RF circuit) → Achieve low power



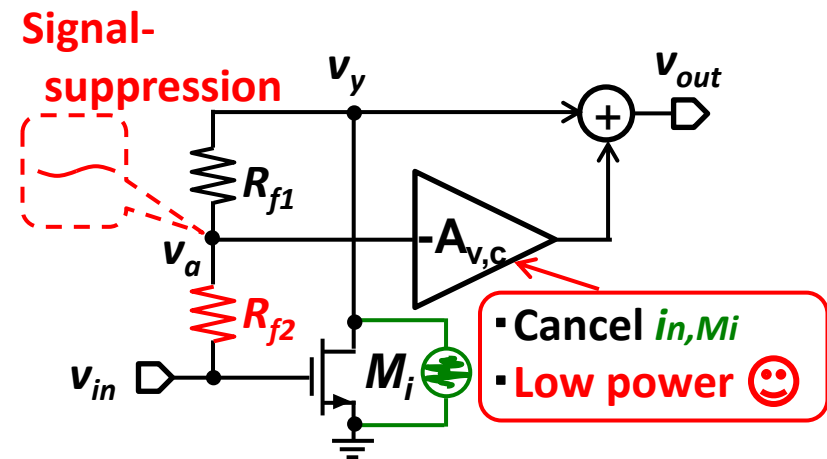
### Our Innovation

Using **signal-suppression feed-forward** to noise canceling amplifier

#### Conventional noise canceling technique



#### Proposed noise canceling technique



Verified low power & low noise with SPECTRE simulation