

Customized Stimulator and Embedded Telemetry

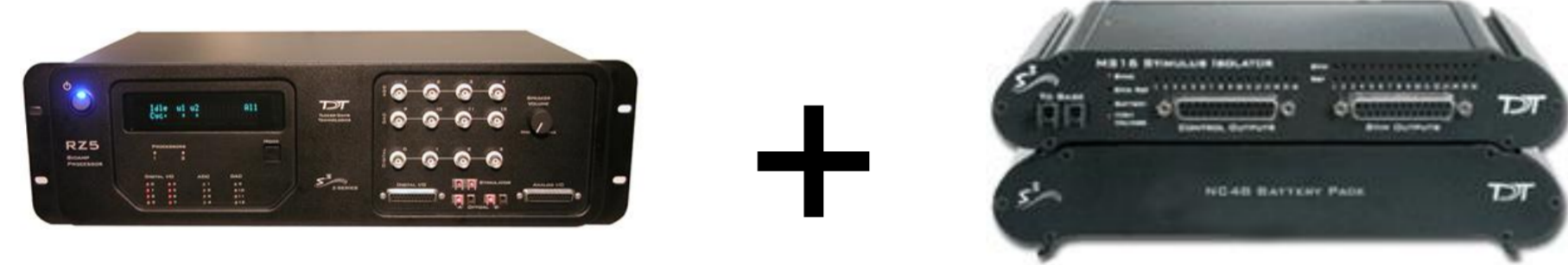
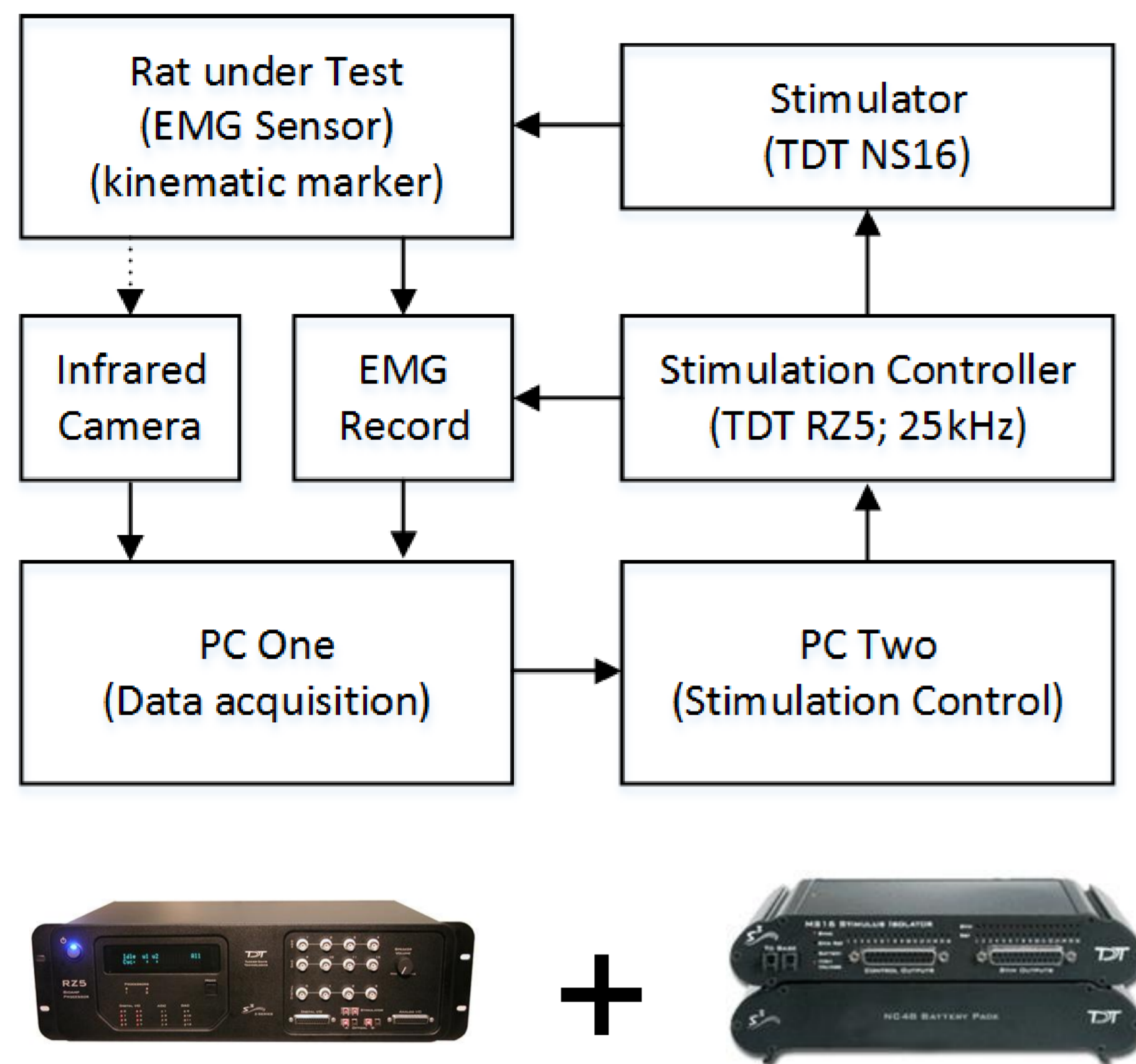
Andreas Hierlemann¹, Daniel Severac², YongHong Tao¹

¹ETHZ, ²CSEM

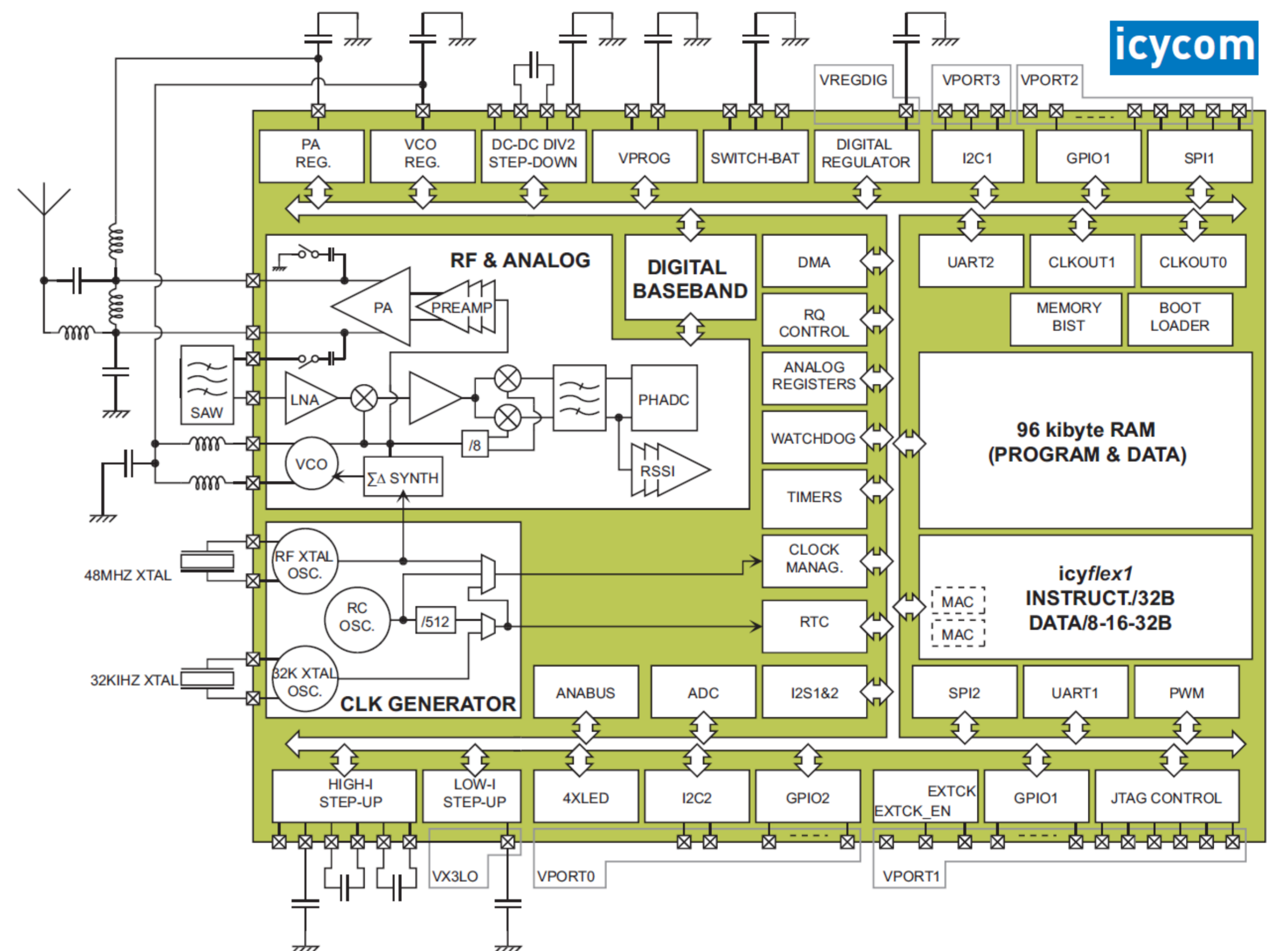
ETH Zürich

csem

Existing Solution



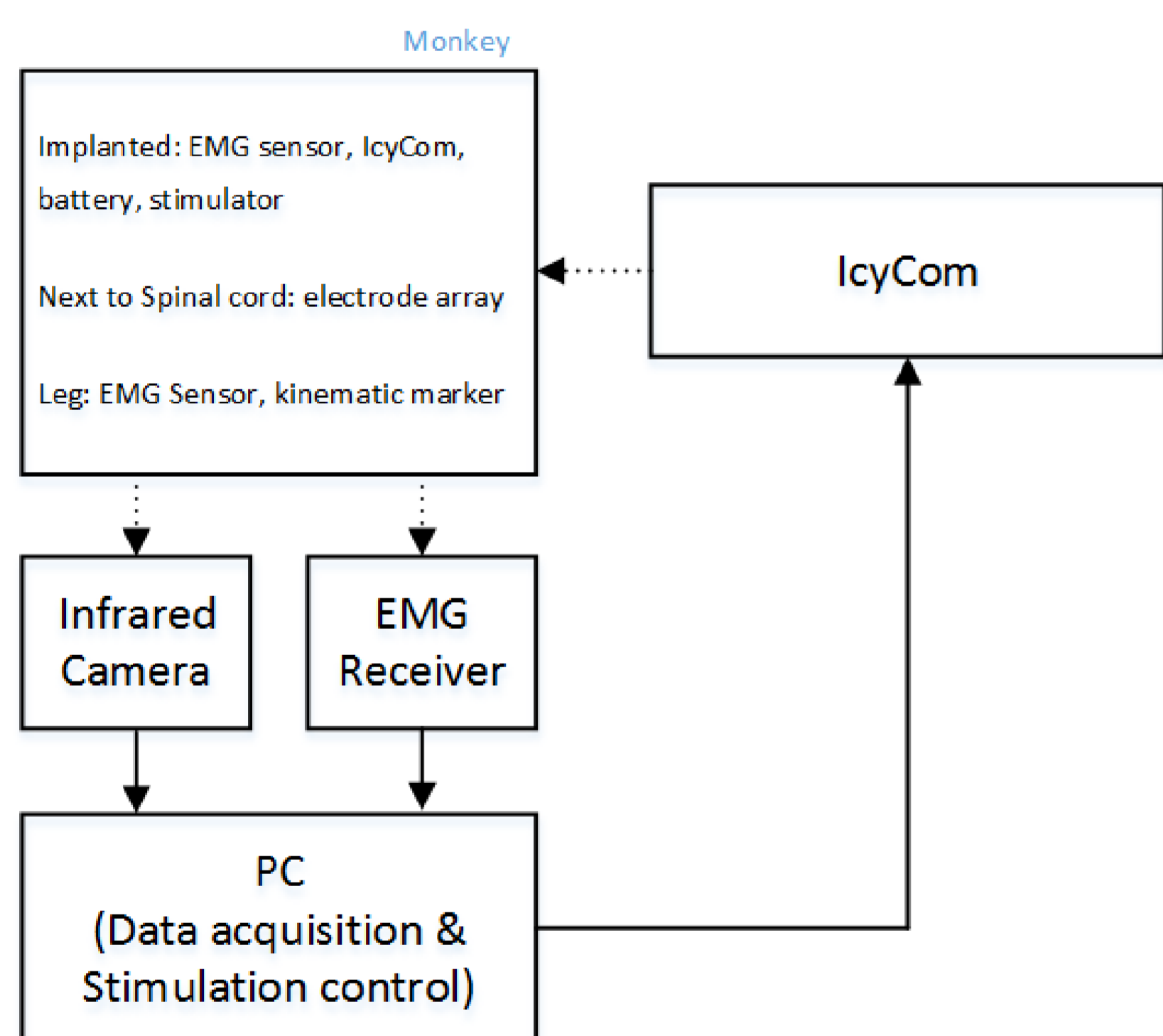
Dimension up to 0.5 m



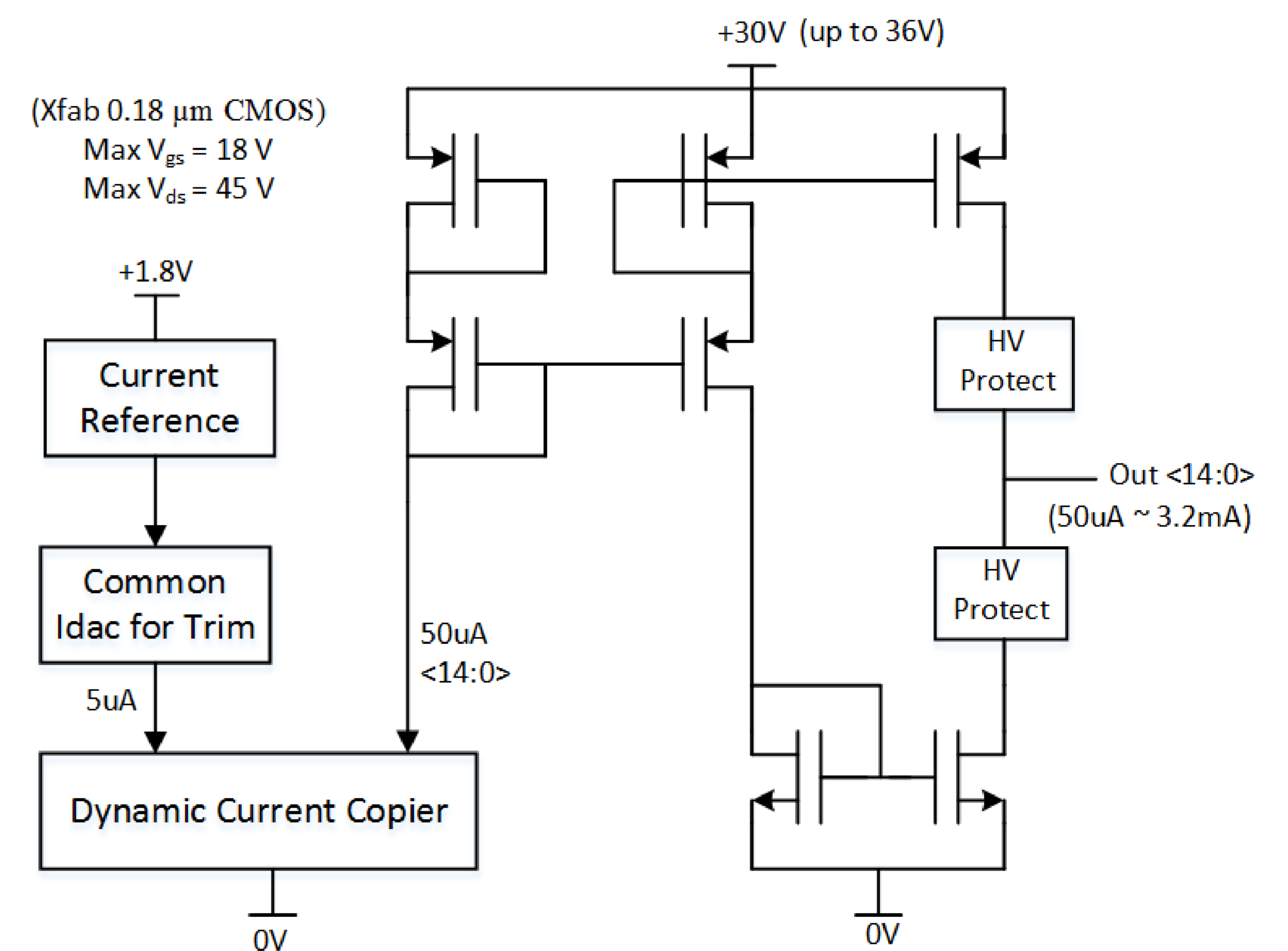
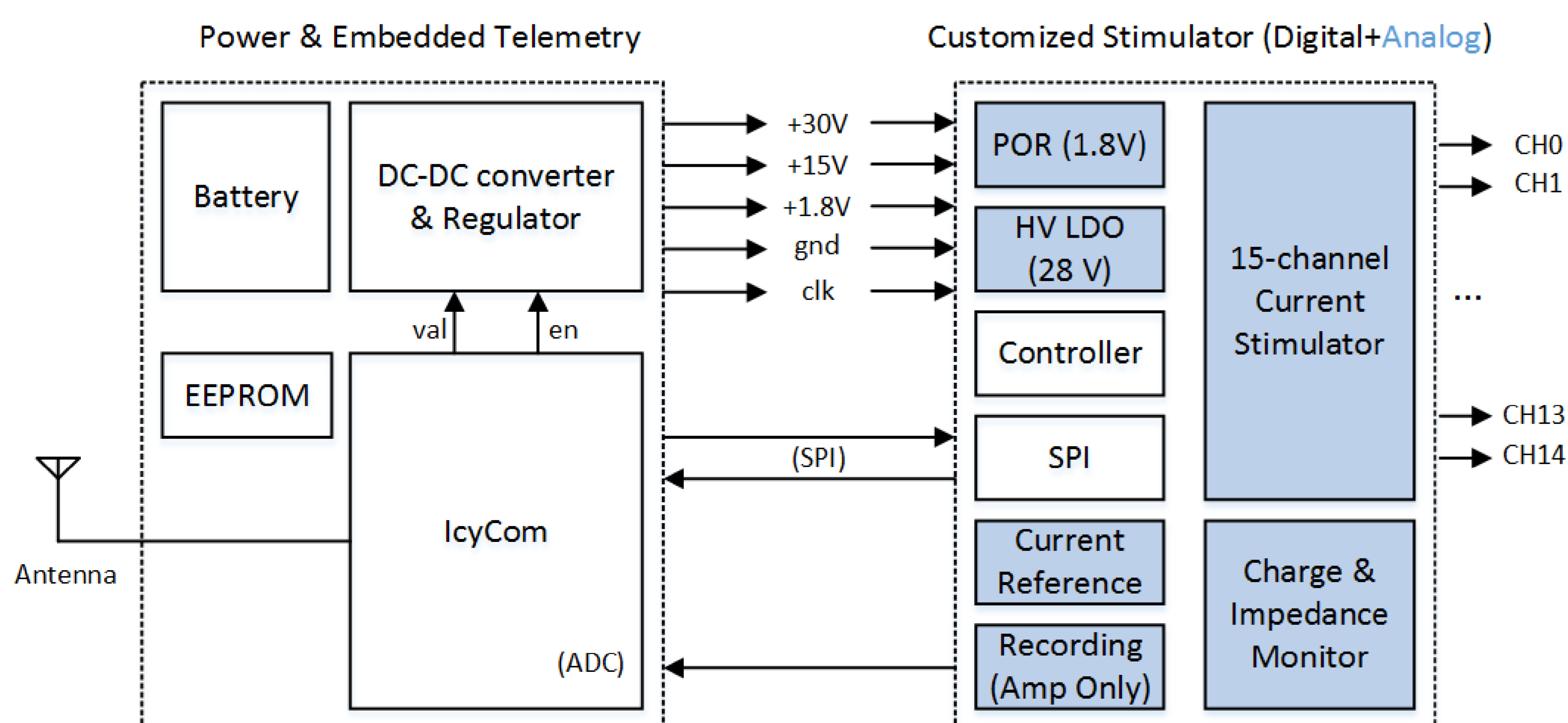
Key Features of the Embedded Telemetry:

- 400 kb/s RF radio
- 32-bit dual-MAC DSP core
- Low power consumption

Our Implantable Solution



~ 15 mm



Key Features of the Customized Stimulator:

- 15 current-stimulation channels
- Maximum compliance-voltage of 30 V
- Maximum current amplitude of 3.2 mA
- High current accuracy of $\pm 5 \mu\text{A}$
- Low standby current of $10 \mu\text{A}$