# Article information:

A 0.0014 mm2, 1.18 TΩ Segmented Duty-Cycled Resistor Replacing Pseudo-Resistor for Neural Recording Interface Circuits | IEEE Conference Publication | IEEE Xplore
<https://ieeexplore.ieee.org/document/9830140>

# Article summary:

1. This paper proposes a segmented duty-cycled resistor (SDR) that replaces the pseudo-resistor for neural recording amplifiers.

2. The SDR achieves up to 1.18TΩ with only 6.5% temperature variation and 1.5% chip-to-chip variation among 10 samples, while occupying an area of 0.001375mm2.

3. The SDR eliminates in-band switching artifacts and output DC drift, while offering sufficiently low and stable cut-off frequencies for both action potential and local field potential recordings.

# Article rating:

Appears well balanced: The article presents the information in a reliable and balanced way, without biases and prejudices. The claims made in the article are well supported and, where applicable, all sides of the argument are given opportunity to present their point of view. The article appears trustworthy and reliable.

# Article analysis:

The article is generally reliable and trustworthy, as it provides detailed information on the proposed design of a segmented duty-cycled resistor (SDR) that replaces the pseudo-resistor for neural recording amplifiers, including its advantages over existing designs such as higher than 1 TΩ resistance and a switching frequency above the signal bandwidth at the same time, eliminating in-band switching artifacts and output DC drift, while only occupying an area of 0.001375mm2. The article also provides evidence for its claims by citing relevant prior works in the field, as well as providing data from experiments conducted on 10 samples to demonstrate its performance characteristics such as up to 1.18TΩ with only 6.5% temperature variation and 1.5% chip-to-chip variation among 10 samples.

The article does not appear to be biased or one sided in any way, nor does it contain any promotional content or partiality towards any particular design or technology mentioned in the article; instead it objectively presents both sides of the argument by discussing existing designs along with their drawbacks before introducing the proposed design as a solution to these issues. Furthermore, possible risks associated with using this technology are noted throughout the article, such as parasitic distributed capacitance which can cause aliasing if not taken into account when designing circuits using this technology.

In conclusion, this article is reliable and trustworthy due to its objective presentation of both sides of the argument along with evidence from experiments conducted on 10 samples demonstrating its performance characteristics, making it suitable for use in IEEE Conference Publication | IEEE Xplore

# Topics for further research:

* Segmented Duty-Cycled Resistor
* Neural Recording Amplifiers
* In-Band Switching Artifacts
* Output DC Drift
* Parasitic Distributed Capacitance
* Aliasing in Circuit Design

# Report location:

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