

uebung_3.5.4

Student Group

First Name	Surname	Matrikel Nr.

Table of Contents

Exercise 3.5.4. Conversion of a unipolar signal into a bipolar signal 3

Exercise 3.5.4. Conversion of a unipolar signal into a bipolar signal

You work in the company “HHN Mechatronics & Robotics” and are supposed to generate a bipolar signal ($-10V \dots + 10V$) from a unipolar signal of a digital-to-analog converter ($0 \dots 5V$) in a project. A colleague recommended the circuit shown on the right.

1. First, analyze what change is made by pressing the switch S . How does the output signal change?
2. Try to determine mathematically the relationship of U_O and U_I as $U_O(U_I)$ by superposition.
3. The circuit still has the problem that for an positive half-wave the output is still negative. Which additional circuit must be provided so that this problem can be solved?

From:

<https://wiki.mexle.org/> - MEXLE Wiki

Permanent link:

https://wiki.mexle.org/circuit_design/uebung_3.5.4?rev=1639007925

Last update: **2021/12/09 00:58**

