

# calc\_decimal\_example

## Student Group

| First Name | Surname | Matrikel Nr. |
|------------|---------|--------------|
|            |         |              |
|            |         |              |
|            |         |              |

## Table of Contents

i

$\$1.\!\!\!\!\!\quad$  Calculation example for decimal value

|             |                        |                  |                 |                |               |   |                    |                     |
|-------------|------------------------|------------------|-----------------|----------------|---------------|---|--------------------|---------------------|
| value       |                        | 2                | 6               | 5              | 8             | , | 4                  | 7                   |
| index       | $i$                    | 3                | 2               | 1              | 0             |   | -1                 | -2                  |
| place value | $B^i$                  | $10^3$<br>\$1000 | $10^2$<br>\$100 | $10^1$<br>\$10 | $10^0$<br>\$1 |   | $10^{-1}$<br>\$0.1 | $10^{-2}$<br>\$0.01 |
| digit       | $z_i$                  | 2                | 6               | 5              | 8             |   | 4                  | 7                   |
| calculation | $z_i \cdot B^i$        | 2000             | 600             | 50             | 8             |   | 0.4                | 0.07                |
| Result      | $\sum_i z_i \cdot B^i$ | 2658,47          |                 |                |               |   |                    |                     |

|                                                 |                                                                                                   |                                                                                        |
|-------------------------------------------------|---------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|
| aus (2+3)                                       | $\textcolor{blue}{i}_p = \textcolor{blue}{i}_m = 0$                                               | $\$l\_p$ und $\$l\_m$ sind damit definiert                                             |
| $\$l_{quad}^{quad}^{quad}^{quad}^{quad}^{quad}$ | $\$l_{quad}^{quad}^{quad}^{quad}^{quad}^{quad}$                                                   | $\$l_{quad}^{quad}^{quad}^{quad}^{quad}^{quad}$                                        |
| aus (6)                                         | $\textcolor{blue}{i}_o = l_1$                                                                     | $\$l\_o$ ist damit bekannt, wenn $\$l_1$ bekannt ist                                   |
| $\$l_{quad}^{quad}^{quad}^{quad}^{quad}^{quad}$ | $\$l_{quad}^{quad}^{quad}^{quad}^{quad}^{quad}$                                                   | $\$l_{quad}^{quad}^{quad}^{quad}^{quad}^{quad}$                                        |
| aus (7) und (3)                                 | $\$l_1 - l_2 - \textcolor{blue}{i}_0 = 0$                                                         | $\$l_{quad}$                                                                           |
| $\$l_{quad}^{quad}^{quad}^{quad}^{quad}^{quad}$ | $\$l_{quad}^{quad}^{quad}^{quad}^{quad}^{quad}$                                                   | $\$l_{quad}^{quad}^{quad}^{quad}^{quad}^{quad}$                                        |
| $\$l_{quad}$                                    | $\$l_1 = l_2 = l_o$                                                                               | $\$l_{quad}$                                                                           |
| $\$l_{quad}^{quad}^{quad}^{quad}^{quad}^{quad}$ | $\$l_{quad}^{quad}^{quad}^{quad}^{quad}^{quad}$                                                   | $\$l_{quad}^{quad}^{quad}^{quad}^{quad}^{quad}$                                        |
| $\$l_{quad}$                                    | $\textcolor{blue}{i}_{l_1} = \textcolor{blue}{i}_{l_2} = \textcolor{blue}{i}_{l_o}$               | mit (8) und (9): $\$l_{boxed} = \textcolor{blue}{i}_{U_{boxed}} \{R_{boxed}\}$ und (5) |
| $\$l_{quad}^{quad}^{quad}^{quad}^{quad}^{quad}$ | $\$l_{quad}^{quad}^{quad}^{quad}^{quad}^{quad}$                                                   | $\$l_{quad}^{quad}^{quad}^{quad}^{quad}^{quad}$                                        |
| $\$l_{quad}$                                    | $\textcolor{blue}{i}_{R_1} = \textcolor{blue}{i}_{R_2} = \textcolor{blue}{i}_{U_A} \{R_1 + R_2\}$ | Spannungsteilerformel, $\$l = \text{const.}$                                           |
| $\$l_{quad}^{quad}^{quad}^{quad}^{quad}^{quad}$ | $\$l_{quad}^{quad}^{quad}^{quad}^{quad}^{quad}$                                                   | $\$l_{quad}^{quad}^{quad}^{quad}^{quad}^{quad}$                                        |
| (10)                                            | $\$U_2 = U_A \cdot \textcolor{blue}{i}_{R_2} \{R_1 + R_2\}$                                       | Spannungsteilerformel                                                                  |
| $\$l_{quad}^{quad}^{quad}^{quad}^{quad}^{quad}$ | $\$l_{quad}^{quad}^{quad}^{quad}^{quad}^{quad}$                                                   | $\$l_{quad}^{quad}^{quad}^{quad}^{quad}^{quad}$                                        |

## \$II.\quad\$ Betrachtung der Spannungsverstärkung

[illegible]

From: <https://mexle.te.hs-heilbronn.de/> - **MEXLE Wiki**

Permanent link:  
[https://mexle.te.hs-heilbronn.de/introduction to digital systems/calc decimal example?rev=1631662298](https://mexle.te.hs-heilbronn.de/introduction%20to%20digital%20systems/calc%20decimal%20example?rev=1631662298)

Last update: **2021/09/15 01:31**

