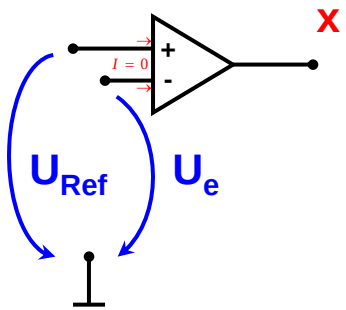
Parallelverfahren A-D

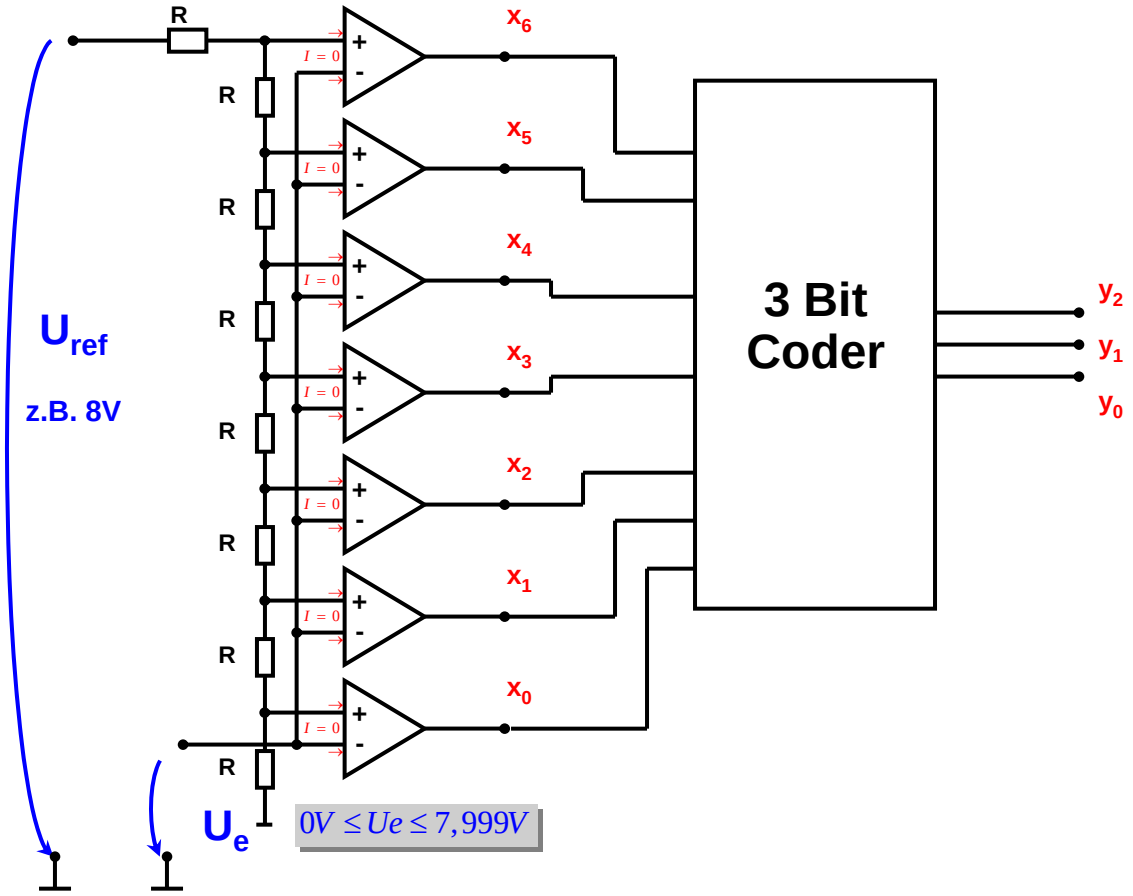


Analog **Digital**

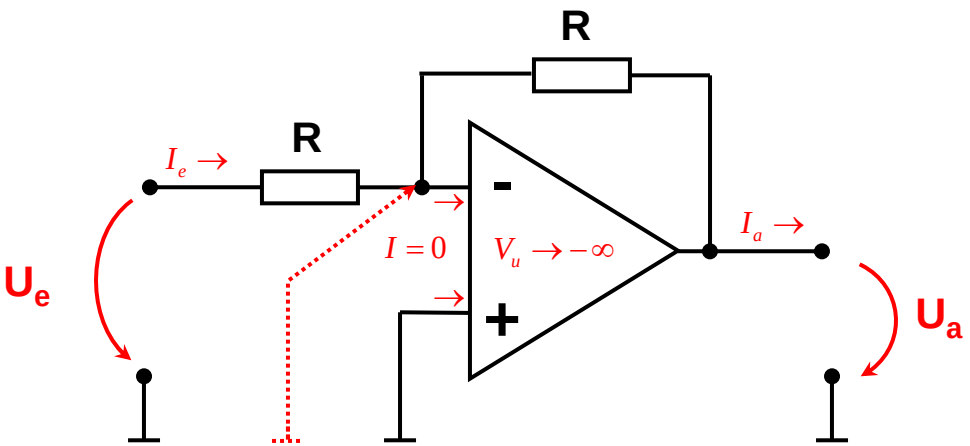
$$U_e \le U_{Ref} \Rightarrow x = 0$$

$$sonst \Rightarrow x = 1$$

Alle R sind gleich !



Invertierender Verstärker

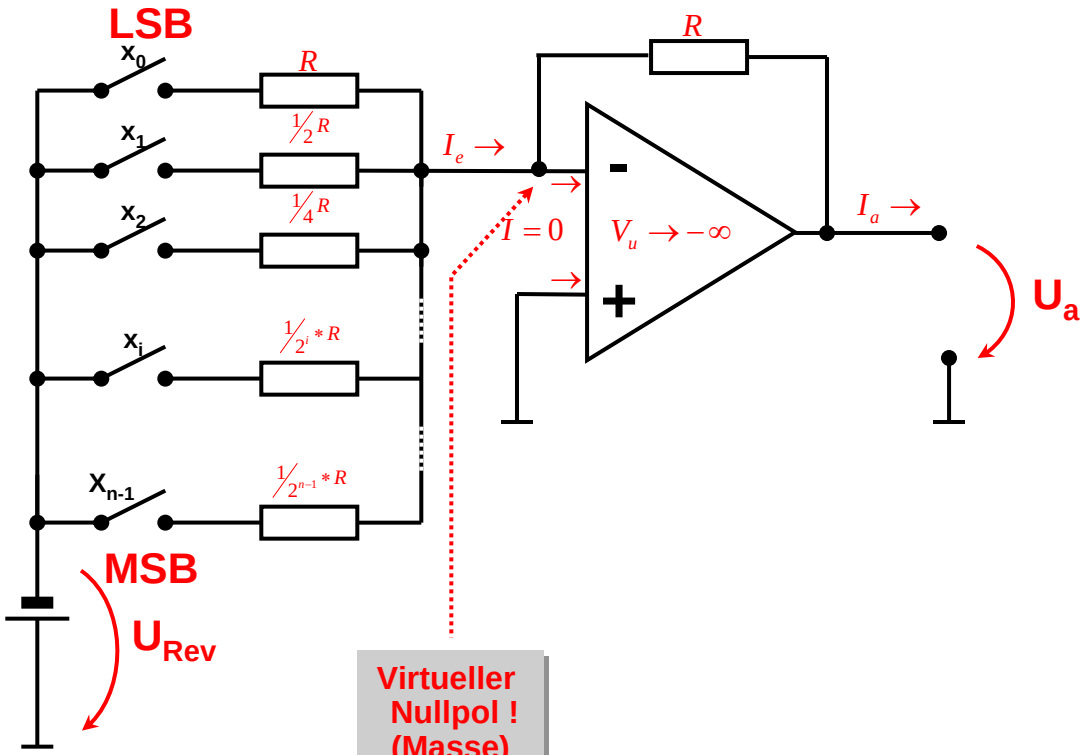


Virtueller Nullpol ! (Masse)

$$U_e = -U_a$$

$$\frac{I_e}{R} = -\frac{I_a}{R}$$

Summierung der Eingangsströme



$$U_e = -U_a$$

$$I_e = -I_a$$

$$I_e = \sum_{0}^{n-1} x_i \frac{2^i * U_{Rev}}{R}$$

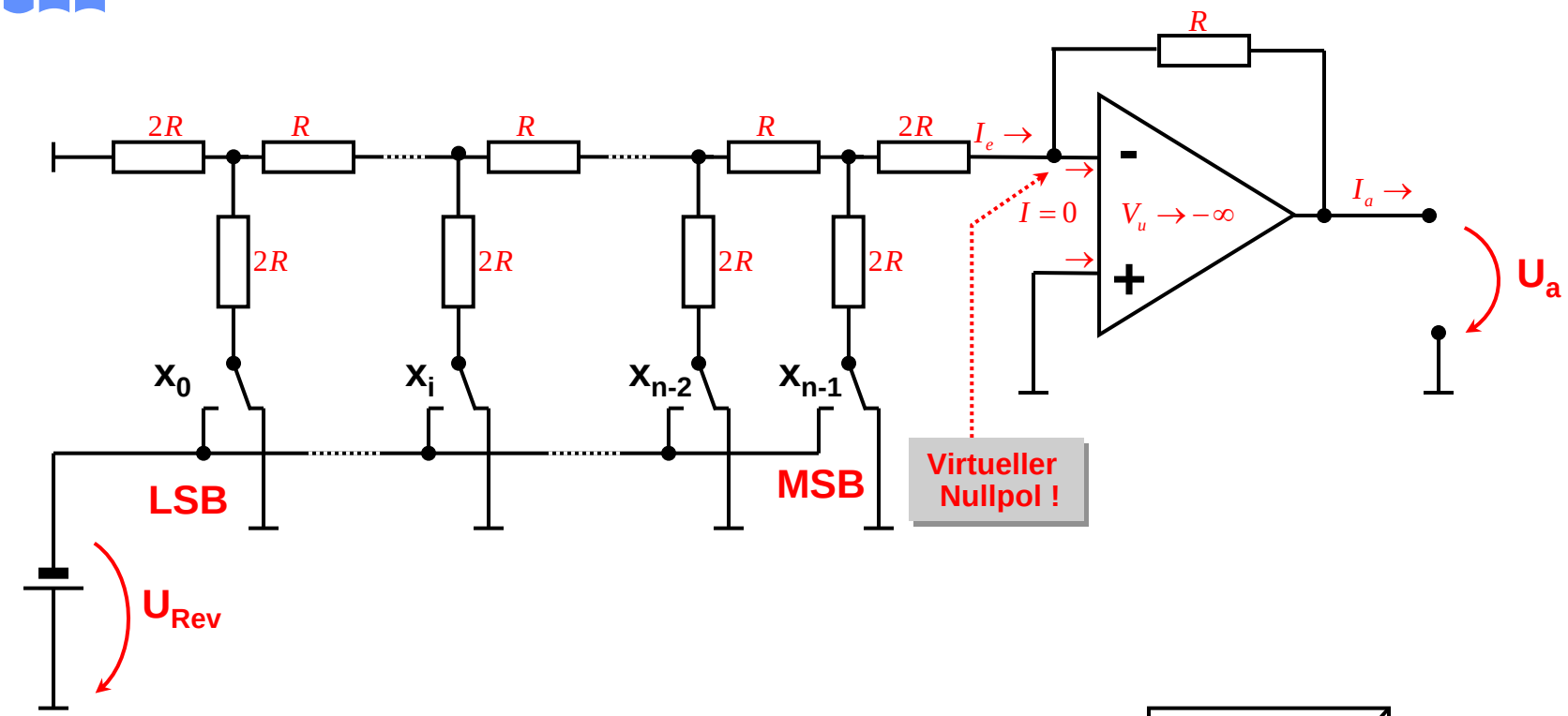
$$I_a * R = -R * \sum_{0}^{n-1} x_i \frac{2^i * U_{Rev}}{R}$$

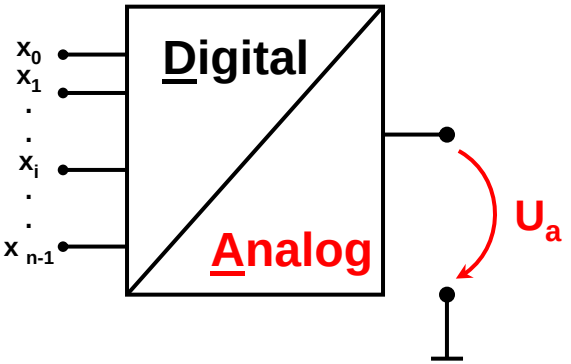
$$U_a = -U_{Rev} * \sum_{0}^{n-1} x_i * 2^i$$

$$Mit \left\{ \begin{array}{ll} x_i = 0 & bei\ \overline{x}_i \\ x_i = 1 & bei\ x_i \end{array} \right\}$$

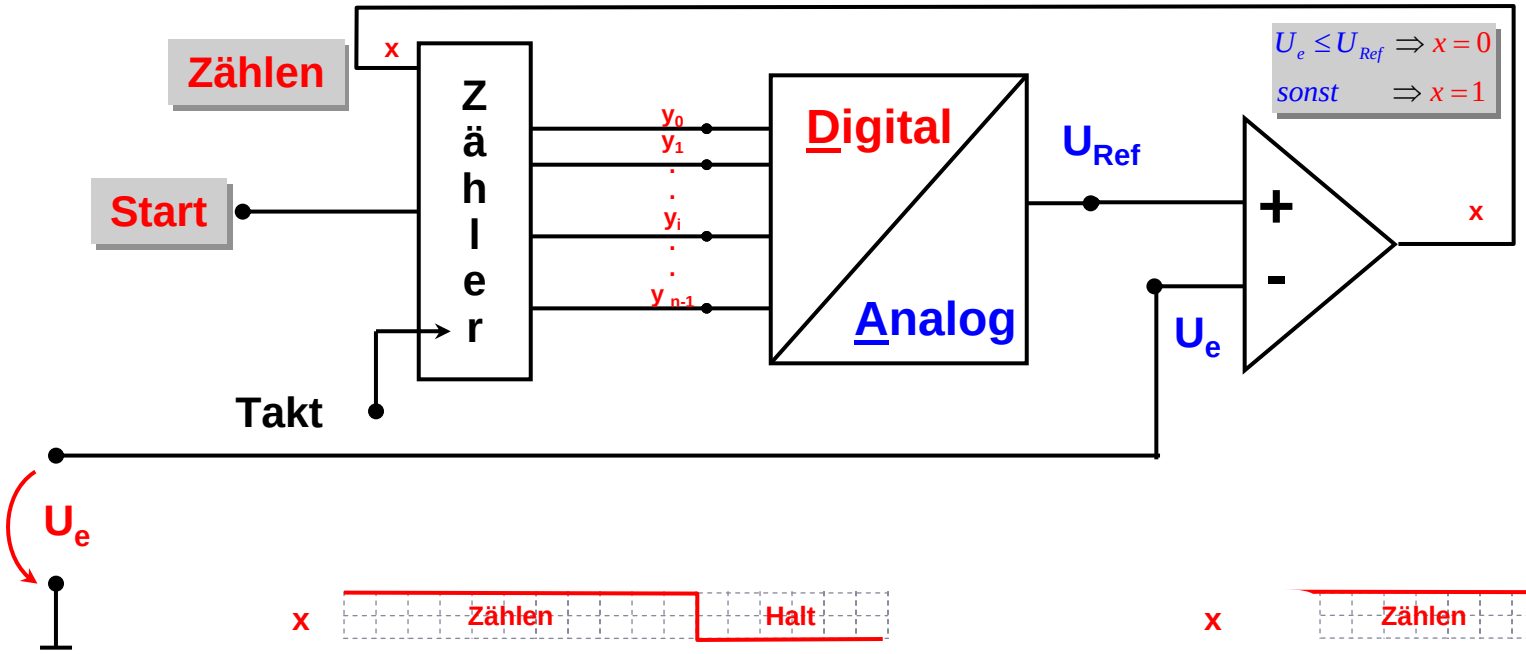
Die Dimensionierung der Widerstände muss sehr hohen Ansprüchen genügen !

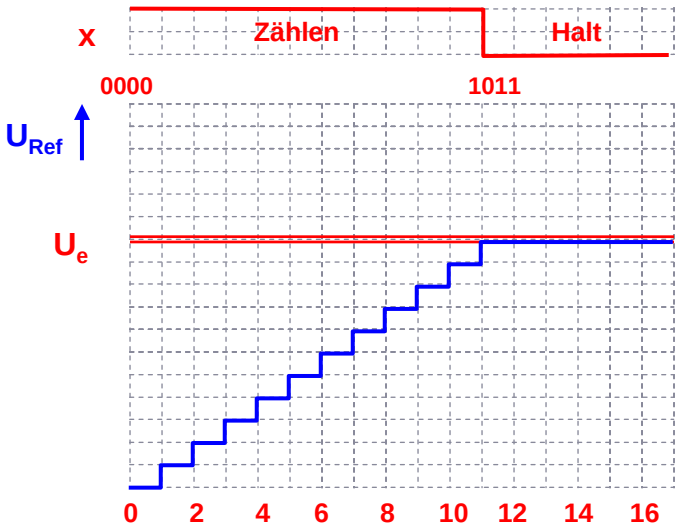
R / 2R Netzwerk D-A

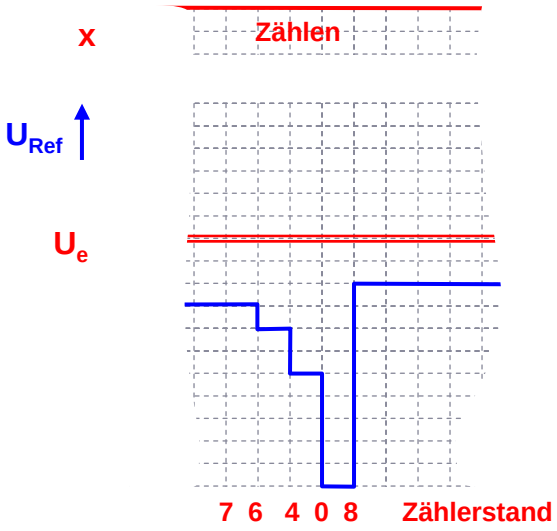




Indirekte A-D Wandlung (Sägezahnverfahren)







A-D Wandlung (sukzessive Approximation)