A/D-Wandler

µC-Programmierung

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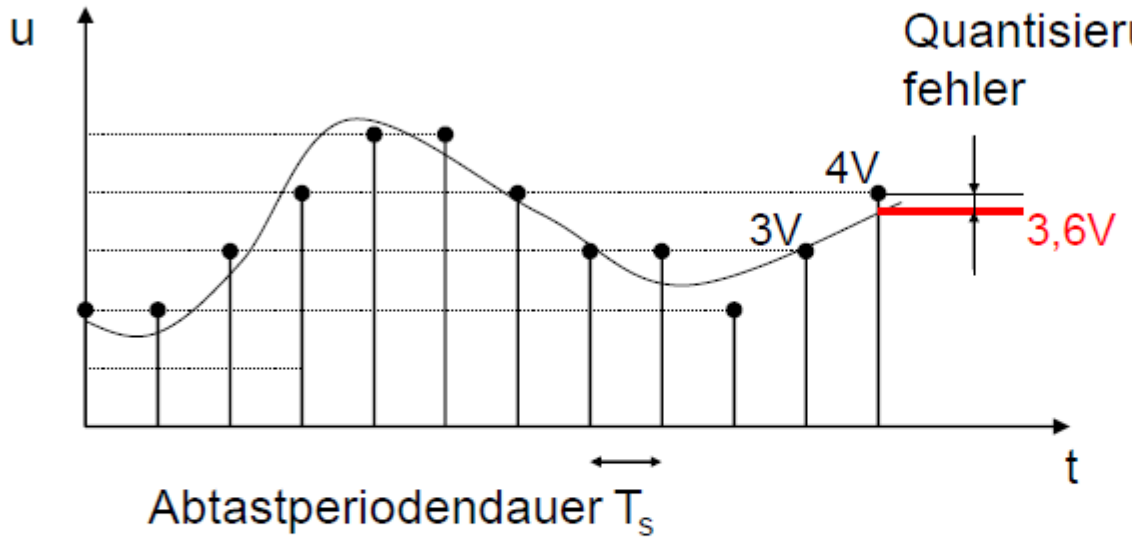
Abtastung und Quantisierung



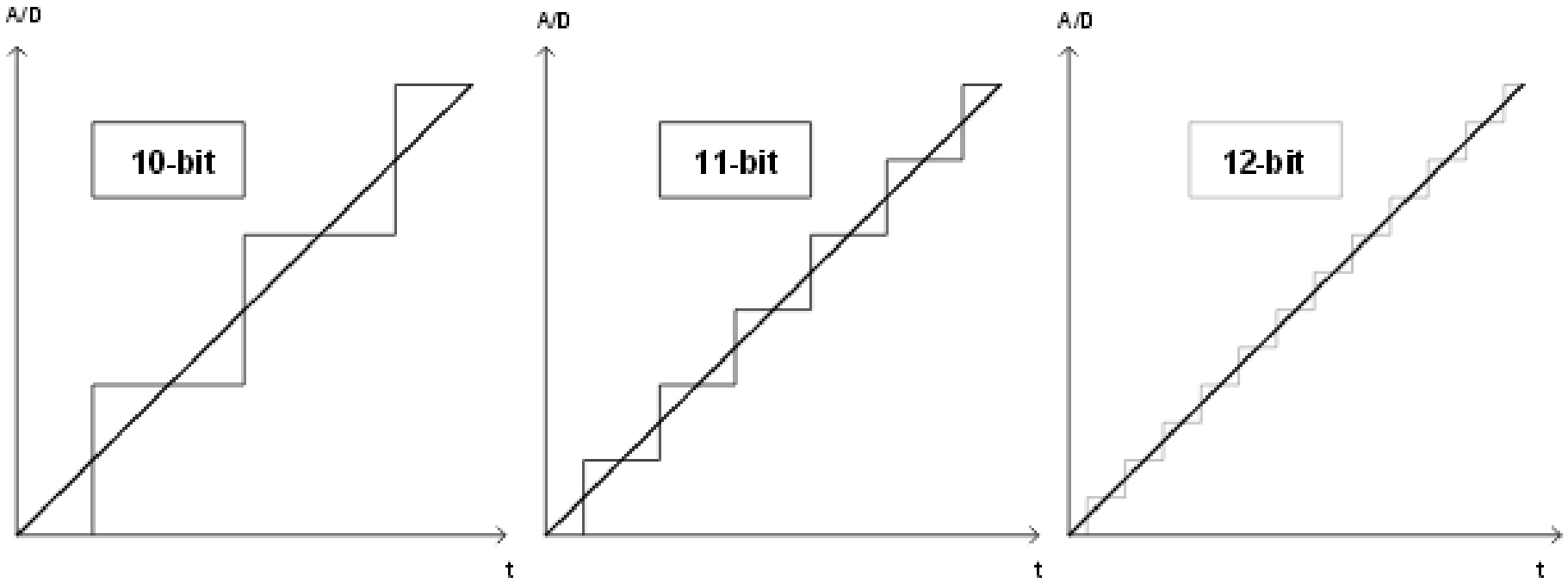
10110100
11010010
01101101
00111010
00010111
01010001
.
.
10010011

Wortbreite
(zB. 8 bit)

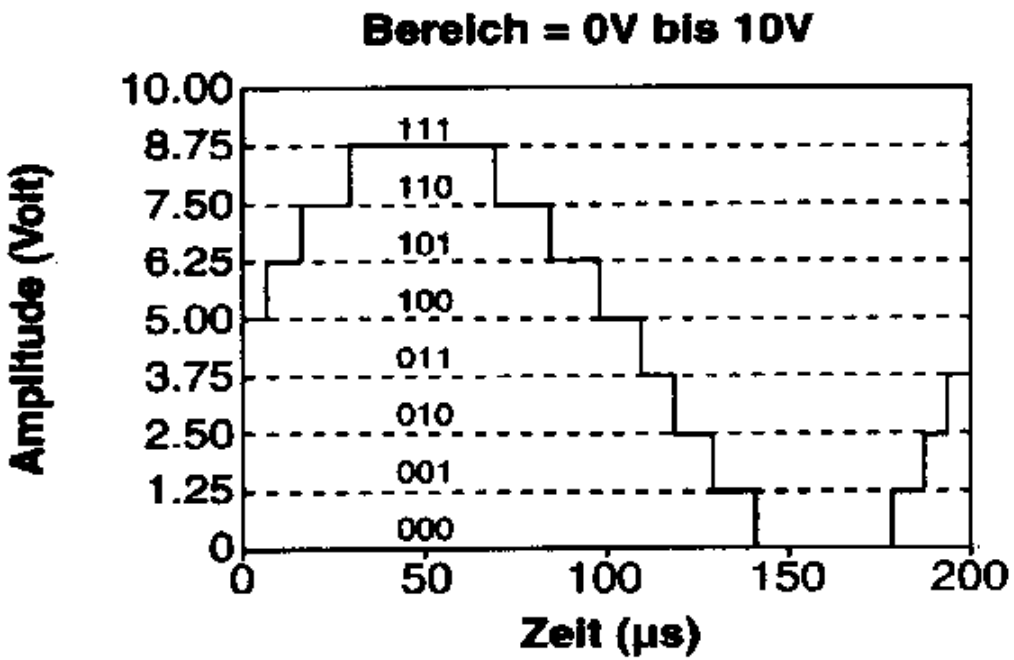
Abtastrate f_s (sampling rate) in kS/s

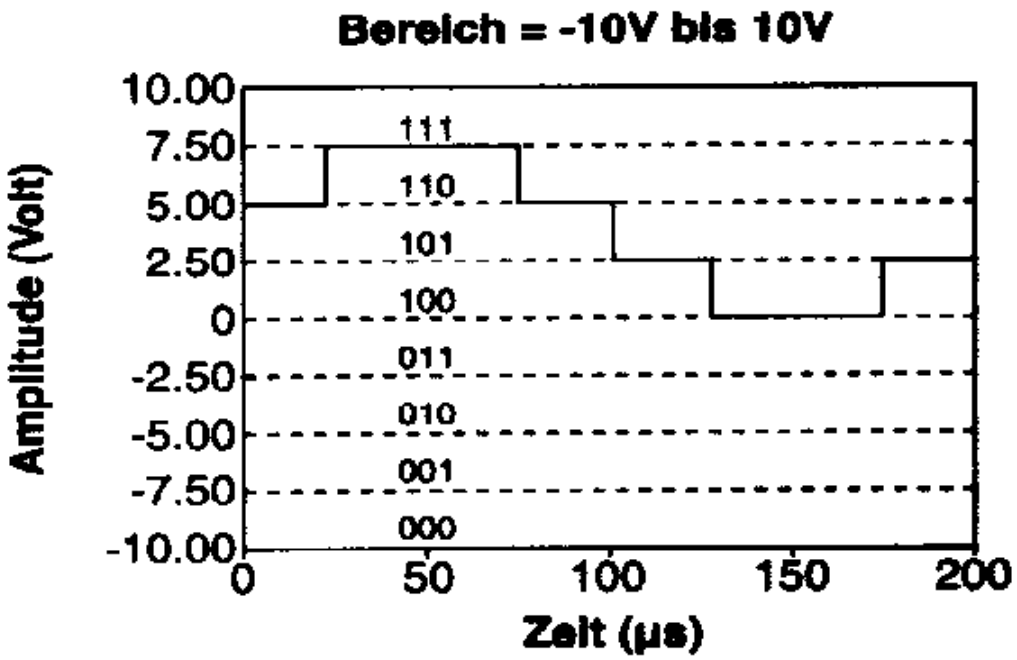
$$f_s = \frac{1}{T_s}$$

Auflösung

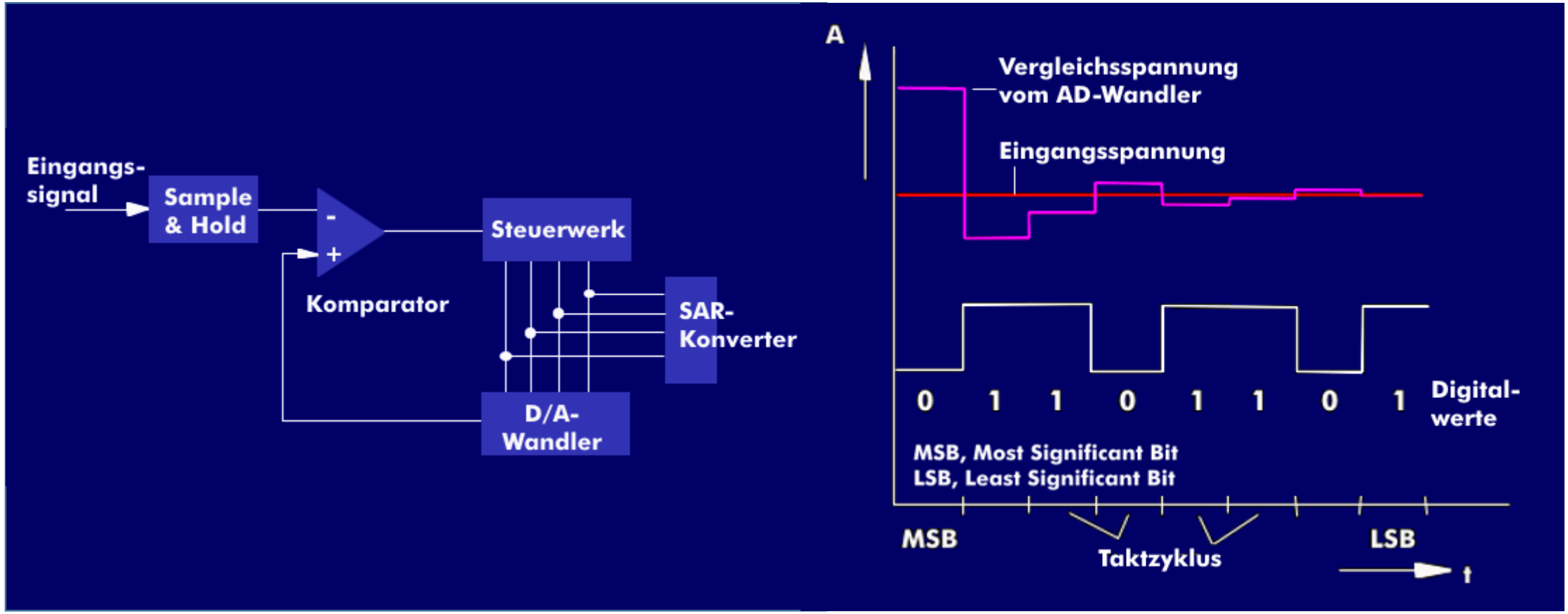


Messbereich

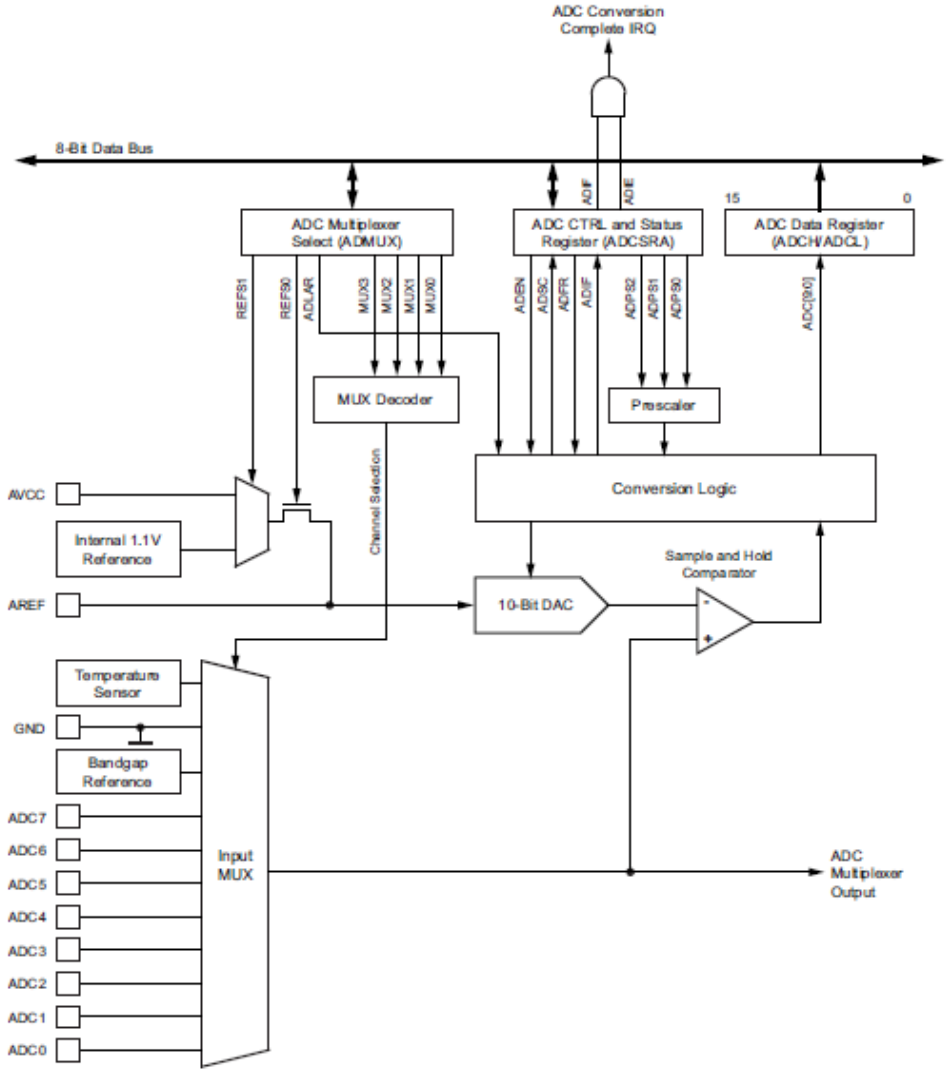




Sukzessive Approximation



Atmega 328P



- 10-bit resolution
- 0.5 LSB integral non-linearity
- ±2 LSB absolute accuracy
- 65 to 260µs conversion time
- Up to 15kSPS
- 6 multiplexed single ended input channels
- 2 additional multiplexed single ended input channels
- Temperature sensor input channel
- Optional left adjustment for ADC result readout
- 0 to V_{CC} ADC input voltage range
- Selectable 1.1V ADC reference voltage
- Free running or single conversion mode
- Interrupt on ADC conversion complete
- Sleep mode noise canceler

Arduino Nano