

Cheatsheet ADC

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ADMUX

ADC Multiplexer Selection Register

| 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
|-------|-------|-------|------|------|------|------|------|
| REFS1 | REFS0 | ADLAR | MUX4 | MUX3 | MUX2 | MUX1 | MUX0 |

Referenzspannung:

| REFS1 | REFS0 | Referenzspannungsauswahl |
|-------|-------|--------------------------|
| 0 | 0 | Externe Spannung an AREF |
| 0 | 1 | AVCC Versorgungsspannung |
| 1 | 0 | Interne Spannung 1.1 V |
| 1 | 1 | Interne Spannung 2.56 V |

Input:

| MUX2 | MUX1 | MUX0 | Einkanaliger Eingang |
|------|------|------|----------------------|
| 0 | 0 | 0 | ADC0 |
| 0 | 0 | 1 | ADC1 |
| 0 | 1 | 0 | ADC2 |
| 0 | 1 | 1 | ADC3 |
| 1 | 0 | 0 | ADC4 |
| 1 | 0 | 1 | ADC5 |
| 1 | 1 | 0 | ADC6 |
| 1 | 1 | 1 | ADC7 |

ADCSRA

Control and Status Register A

| 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
|------|------|-------|------|------|-------|-------|-------|
| ADEN | ADSC | ADATE | ADIF | ADIE | ADPS2 | ADPS1 | ADPS0 |

ADEN

ADC Enable

- **1** aktiviert den ADC
- **0** deaktiviert den ADC

ADSC

ADC Start Conversion

- **1** start für jede Wandlung. Startet die erste Wandlung im "Free Running Mode".

ADATE

ADC Auto trigger enable

- **1** aktiviert auto triggering
- **0** deaktiviert auto triggering

ADIF

ADC Interrupt Flag

ADIE

ADC Interrupt Enable

- **1** aktiviert den ADC Interrupt
- **0** deaktiviert den ADC Interrupt

ADC Prescaler

| ADPS2 | ADPS1 | ADPS0 | Prescaler |
|-------|-------|-------|-----------|
| 0 | 0 | 0 | 2 |
| 0 | 0 | 1 | 2 |
| 0 | 1 | 0 | 4 |
| 0 | 1 | 1 | 8 |
| 1 | 0 | 0 | 16 |
| 1 | 0 | 1 | 32 |
| 1 | 1 | 0 | 64 |
| 1 | 1 | 1 | 128 |

ADCSRB

Control and Status Register B

| 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
|---|------|---|---|------|-------|-------|-------|
| — | ACME | — | — | MUX5 | ADTS2 | ADTS1 | ADTS0 |

ADC Auto Trigger Source

| ADTS2 | ADTS1 | ADTS0 | Trigger Source |
|-------|-------|-------|------------------------------|
| 0 | 0 | 0 | Free running mode |
| 0 | 0 | 1 | Analog Comparator |
| 0 | 1 | 0 | External Interrupt Request 0 |
| 0 | 1 | 1 | Timer 0 Compare Match A |
| 1 | 0 | 0 | Timer 0 Overflow |
| 1 | 0 | 1 | Timer 1 Compare Match B |
| 1 | 1 | 0 | Timer 1 Overflow |
| 1 | 1 | 1 | Timer 1 Capture Event |

ADCL und ADCH

ADC Low und ADC High

ADCH

| 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
|---|---|---|---|---|---|------|------|
| — | — | — | — | — | — | ADC9 | ADC8 |

ADCL

| 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
|------|------|------|------|------|------|------|------|
| ADC7 | ADC6 | ADC5 | ADC4 | ADC3 | ADC2 | ADC1 | ADC0 |

Interrupt Vektor

ADC_vect