

Instrukční soubor mikroprocesorů 8051 / 8052

| | | A | Rx | a ₈ | @Rr | #d ₈ | DPTR | @DPTR | C | AC | OV | P | vysvětlení |
|--------------------------------------|-----------------------|----------------|-----------------|----------------|-----|-----------------|------|-------|---|----|----|---|---|
| <i>< přesuny ></i> | | | | | | | | | | | | | |
| MOV | A, | - | - | 1/1 | 2/1 | 1/1 | 2/1 | - | - | - | - | P | (A) ← () |
| MOV | Rx, | - | 1/1 | - | 2/2 | - | 2/1 | - | - | - | - | P | (Rx) ← () |
| MOV | a ₈ , | - | 2/1 | 2/2 | 3/2 | 2/2 | 3/2 | - | - | - | - | - | (a ₈) ← () |
| MOV | @Rr, , | - | 1/1 | - | 2/2 | - | 2/1 | - | - | - | - | - | ((Rr)) ← () |
| MOV | DPTR,#d ₁₆ | 3/2 | - | - | - | - | - | - | - | - | - | - | (DPTR) ← d ₁₆ |
| MOVC | A,@A+ | - | - | - | - | - | 1/2 | - | - | - | - | P | (A) ← ((A)+(DPTR)) _c |
| MOVC | A,@A+PC | 3/2 | - | - | - | - | - | - | - | - | - | P | (A) ← ((A)+(PC)) _c |
| MOVB | A, | - | - | - | - | 1/2 | - | - | - | - | - | P | (A) ← (()) _x |
| MOVX | ,A | - | - | - | - | 1/2 | - | - | - | - | - | P | (()) _x ← (A) |
| PUSH | a ₈ | - | - | - | 2/2 | - | - | - | - | - | - | - | zásobník ← (a ₈) |
| POP | a ₈ | - | - | - | 2/2 | - | - | - | - | - | - | - | (a ₈) ← zásobník |
| XCH | A, | - | - | 1/1 | 2/1 | 1/1 | - | - | - | - | - | P | (A) ↔ () |
| XCHD | A, | - | - | - | 1/1 | - | - | - | - | - | - | P | (A ₃₋₀) ↔ (₃₋₀) |
| <i>< aritmetické operace ></i> | | | | | | | | | | | | | |
| INC | | - | 1/1 | - | - | - | - | - | - | - | - | P | () ← () + 1 |
| INC | | - | - | 1/1 | 2/1 | 1/1 | - | 1/2 | - | - | - | - | () ← () + 1 |
| DEC | | - | 1/1 | 1/1 | 2/1 | 1/1 | - | - | - | - | - | - | () ← () - 1 |
| ADD | A, | - | 1/1 | 2/1 | 1/1 | - | 2/1 | - | C | AC | OV | P | (A) ← (A)+() |
| ADDC | A, | - | 1/1 | 2/1 | 1/1 | - | 2/1 | - | C | AC | OV | P | (A) ← (A)+(C)+() |
| DA | A | - | 1/1 | - | - | - | - | - | C | AC | - | P | dokad.korekce po + |
| SUBB | A, | - | 1/1 | 2/1 | 1/1 | - | 2/1 | - | C | AC | OV | P | (A) ← (A)-(C)-() |
| MUL | AB | 1/4 | - | - | - | - | - | - | 0 | - | OV | P | (A),(B) ← (A) * (B) |
| DIV | AB | 1/4 | - | - | - | - | - | - | 0 | - | OV | P | (A),(B) ← (A) / (B) |
| <i>< logické operace ></i> | | | | | | | | | | | | | |
| ANL | A, | - | 1/1 | 2/1 | 1/1 | - | - | - | - | - | - | P | (A) ← (A) AND () |
| ANL | A, | - | - | - | - | 2/1 | - | - | - | - | - | - | (A) ← (A) AND () |
| ORL | A, | - | 1/1 | 2/1 | 1/1 | - | 2/1 | - | - | - | - | P | (A) ← (A) OR () |
| ORL | a ₈ , | - | 2/1 | - | - | - | - | - | - | - | - | - | (a ₈) ← (a ₈) OR () |
| ORL | a ₈ , | - | - | - | - | 3/2 | - | - | - | - | - | P | (a ₈) ← (a ₈) OR () |
| XRL | A, | - | 1/1 | 2/1 | 1/1 | - | 2/1 | - | - | - | - | P | (A) ← (A) XOR () |
| XRL | a ₈ , | - | 2/1 | - | - | 3/2 | - | - | - | - | - | - | (a ₈) ← (a ₈) XOR () |
| CLR | A | - | 1/1 | - | - | - | - | - | - | - | - | P | (A) ← (0) |
| CPL | A | - | 1/1 | - | - | - | - | - | - | - | - | - | (A) ← NOT (A) |
| <i>< posuny ></i> | | | | | | | | | | | | | |
| RL | A | - | 1/1 | - | - | - | - | - | - | - | - | - | rotace vlevo |
| RLC | A | - | 1/1 | - | - | - | - | - | C | - | - | P | rotace vlevo přes C |
| RR | A | - | 1/1 | - | - | - | - | - | - | - | - | - | rotace vpravo |
| RRC | A | - | 1/1 | - | - | - | - | - | C | - | - | P | rotace vpravo přes C |
| SWAP | A | - | 1/1 | - | - | - | - | - | - | - | - | - | (A ₀₋₃) ↔ (A ₄₋₇) |
| | | b ₈ | /b ₈ | C | NC | B | NB | BC | C | AC | OV | P | vysvětlení |
| <i>< bitové operace ></i> | | | | | | | | | | | | | |
| CLR | | - | 2/1 | - | 1/1 | - | - | - | * | - | - | - | () ← 0 |
| SETB | | - | 2/1 | - | 1/1 | - | - | - | * | - | - | - | () ← 1 |
| CPL | | - | 2/1 | - | 1/1 | - | - | - | * | - | - | - | () ← NOT () |

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|-----|--------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|---|---|---|---|---|
| ANL | C, | - | 2/2 | 2/2 | - | - | - | - | - | C | - | - | - | (C) ← (C) AND () |
| ORL | C, | - | 2/2 | 2/2 | - | - | - | - | - | C | - | - | - | (C) ← (C) OR () |
| MOV | C,b ₈ | 2/1 | - | - | - | - | - | - | - | C | - | - | - | (C) ← (b ₈) |
| MOV | b ₈ ,C | 2/2 | - | - | - | - | - | - | - | - | - | - | - | (b ₈) ← (C) |
| J | r ₈ | - | - | - | 2/2 | 2/2 | - | - | - | - | - | - | - | (PC) ← (PC)+2+if(,r ₈ ,0) |
| J | b ₈ ,r ₈ | - | - | - | - | - | 3/2 | 3/2 | - | - | - | - | - | (PC) ← (PC)+3+if(,r ₈ ,0) |
| J | b ₈ ,r ₈ | - | - | - | - | - | - | - | 3/2 | - | - | - | - | (PC) ← (PC)+3+if(,r ₈ ,0),(b ₈) ← 0 |

| | | A | Rx | @Rr | a ₈ | Z | NZ | C | AC | OV | P | | | |
|------------------------------------|----------------------------------|------|-----|-----|----------------|-----|-----|---|----|----|---|---|---|--|
| <hr/> <i>< skoky ></i> <hr/> | | | | | | | | | | | | | | |
| ACALL | a ₁₁ | 2/2 | - | - | - | - | - | - | - | - | - | - | - | {SP}←(PC+2).(PC)-a ₁₁ ,SP=SP+2 |
| LCALL | a ₁₆ | 3/2 | - | - | - | - | - | - | - | - | - | - | - | {SP}←(PC+3).(PC)-a ₁₆ ,SP=SP+2 |
| RET | | 1/2 | - | - | - | - | - | - | - | - | - | - | - | (PC) ← (SP), SP=SP - 2 |
| RETI | | 1/2, | - | - | - | - | - | - | - | - | - | - | - | (PC) ← (SP), SP=SP - 2 |
| AJMP | a ₁₁ | 2/2 | - | - | - | - | - | - | - | - | - | - | - | (PC) ₀₋₁₀ ← a ₁₁ |
| LJMP | a ₁₆ | 3/2 | - | - | - | - | - | - | - | - | - | - | - | (PC) ← a ₁₆ |
| SJMP | r ₈ | 2/2 | - | - | - | - | - | - | - | - | - | - | - | (PC) ← (PC) + 2 + r ₈ |
| JMP | @A+DPTR | 1/2 | - | - | - | - | - | - | - | - | - | - | - | (PC) ← (A) + (DPTR) |
| J | r ₈ | - | - | - | - | 2/2 | 2/2 | - | - | - | - | - | - | (PC) ← (PC)+3+if(,r ₈ ,0) |
| CJNE | A,a ₈ ,r ₈ | 3/2 | - | - | - | - | - | - | C | - | - | - | - | (PC)←(PC)+3+if ((A)=(a ₈),r ₈ ,0) |
| CJNE | ,#d ₈ ,r ₈ | - | 3/2 | 3/2 | 3/2 | - | - | - | C | - | - | - | - | (PC)←(PC)+3+if (()=d ₈ ,r ₈ ,0) |
| DJNZ | ,r ₈ | - | - | 3/2 | - | 3/2 | - | - | - | - | - | - | - | (PC)←(PC)+3+if (()=0,r ₈ ,0), () ← () - 1 |

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| NOP | | 1/1 | | | | | | | | | | | | nic |

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|----------------------------------|--|------|---|
| A | ...střadač | 1/1 | ...počet slabik/cyklů |
| Rx | ...registr R0÷R7 | c | ...paměť programu |
| @Rr | ...nepřímá adresa v R0, R1 | x | ...externí paměť dat |
| a ₈ | ...přímá adresa | * | ...ovlivňuje, je-li operandem |
| d ₈ , d ₁₆ | ...bezprostřední data (8, 16 bitů) | {SP} | ...ukládání do (SP+1) a (SP+2), vybírání z (SP) a (SP-1) |
| r ₈ | ...relativní adresa | | |
| b ₈ | ...bitová adresa | | |
| (/b ₈) | ...negovaný obsah buňky na adrese b ₈ | | |