# OLMS-66K SERIES INSTRUCTION LIST (for nX-8/500S Core)
# MSM66589/66P589/66Q589

## Data Transfer Instructions

| Mnemonic | Function |
|---|---|
| L | 16-bit load |
| LB | 8-bit load |
| ST | 16-bit store |
| STB | 8-bit store |
| MOV | 16-bit transfer |
| MOVB | 8-bit transfer |
| CLR | 16-bit clear |
| CLRB | 8-bit clear |
| FILL | 16-bit set |
| FILLB | 8-bit set |
| SWAP | 16-bit swap |
| XCHG | 16-bit exchange |
| XCHGB | 8-bit exchange |

## Stack Manipulation Instructions

| Mnemonic | Function |
|---|---|
| PUSHS | 16-bit push (system stack) |
| POPS | 16-bit pop (system stack) |

## Rotate/Shift Instructions

| Mnemonic | Function |
|---|---|
| ROL | 16-bit left rotate |
| ROLB | 8-bit left rotate |
| ROR | 16-bit right rotate |
| RORB | 8-bit right rotate |
| SLL | 16-bit left shift |
| SLLB | 8-bit left shift |
| SRL | 16-bit right shift |
| SRLB | 8-bit right shift |
| SRA | 16-bit arithmetic |
| SRAB | 8-bit arithmetic |

### Increment/Decrement Instructions

| Mnemonic | Function |
|---|---|
| INC | 16-bit increment |
| INCB | 8-bit decrement |
| DEC | 16-bit decrement |
| DECB | 8-bit decrement |

### ROM Table Reference Instructions

| Mnemonic | Function |
|---|---|
| LC | 16-bit ROM reference |
| LCB | 8-bit ROM reference |
| CMPC | 16-bit ROM comparison |
| CMPCB | 8-bit ROM comparison |

### Arithmetic Instructions

| Mnemonic | Function |
|---|---|
| MUL | 16-bit multiplication |
| MULB | 8-bit multiplication |
| DIV | 16-bit division |
| DIVB | 8-bit division |
| DIVQ | 16-bit quick division |
| ADD | 16-bit addition |
| ADDB | 8-bit addition |
| ADC | 16-bit addition with carry |
| ADCB | 8-bit addition with carry |
| SUB | 16-bit subtraction |
| SUBB | 8-bit subtraction |
| SBC | 16-bit subtraction with carry |
| SBCB | 8-bit subtraction with carry |
| NEG | 16-bit change sign operation |
| NEGB | 8-bit change sign operation |
| SQR A | ACC 16-bit square |
| SQRB A | ACC 8-bit square |

### Logical Instructions

| Mnemonic | Function |
|---|---|
| AND | 16-bit logical AND |
| ANDB | 8-bit logical AND |
| OR | 16-bit logical OR |
| ORB | 8-bit logical OR |
| XOR | 16-bit exclusive-OR |
| XORB | 8-bit exclusive-OR |

### Comparison Instructions

| Mnemonic | Function |
|---|---|
| CMP | 16-bit comparison |
| CMPB | 8-bit comparison |

### Code Extension Instructions

| Mnemonic | Function |
|---|---|
| EXTND | Signed byte→signed word extension |

### Bit Manipulation Instructions

| Mnemonic | Function |
|---|---|
| SBR | Set bit (register indirect bit designation) |
| RBR | Reset bit (register indirect bit designation) |
| TBR | Test bit (register indirect bit designation) |
| MBR | Bit transfer (register indirect bit designation) |
| SB | Set bit (direct bit designation) |
| RB | Reset bit (direct bit designation) |
| MB | Bit transfer (direct bit designation) |
| BAND | Bit logical AND with carry flag bit |
| BOR | Bit logical OR with carry flag bit |
| BXOR | Bit logical XOR with carry flag bit |
| BANDN | Bit logical AND with carry flag bit and bit's complement |
| BORN | Bit logical OR with carry flag bit and bit's complement |

### Jump/Call/Return Instructions

| Mnemonic | Function |
|---|---|
| SJ | Short jump |
| J | 64K-byte space jump |
| JC | Conditional jump |
| JBR | Bit test & jump |
| JBRS | Bit test & jump & set |
| JBS | Bit test & jump |
| JBSR | Bit test & jump & reset |
| TJZ | 16-bit zero test & jump |
| TJNZ | 16-bit non-zero test & jump |
| TJZB | 8-bit zero test & jump |
| TJNZB | 8-bit non-zero test & jump |
| DJNZ | Loop |
| CAL | 64K-byte space call |
| FCAL | 16M-byte space call |
| VCAL | 1-byte vector call |
| ACAL | 2-byte call |
| RT | Return from subroutine |
| RTI | Return from interrupt routine |
| FJ | 16M-byte space direct jump |
| FRT | Return from FAR subroutine |

### Other Instructions

| Mnemonic | Function |
|---|---|
| SC | Set carry |
| RC | Reset carry |
| SDD | Set data desciptor |
| RDD | Reset data descriptor |
| BRK | Break (system reset) |
| NOP | No operation |
| EI | Set MIEF |
| DI | Reset MIEF |
| CPL C | Carry complement |