|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Instruction | ALU Op | Carry In | C1 (Imm or Reg) | C2 (1’s comp) | C4 (0 or Rdest) | C5 (Write to RF) | C6 (Go to DM) |
| ADD | 001 | 0 | 0 | 0 | 1 | 1 | 0 |
| ADDI | 001 | 0 | 1 | 0 | 1 | 1 | 0 |
| SUB | 001 | 1 | 0 | 1 | 1 | 1 | 0 |
| SUBI | 001 | 1 | 1 | 1 | 1 | 1 | 0 |
| AND | 010 | 0 | 0 | 0 | 1 | 1 | 0 |
| ANDI | 010 | 0 | 1 | 0 | 1 | 1 | 0 |
| OR | 011 | 0 | 0 | 0 | 1 | 1 | 0 |
| ORI | 011 | 0 | 1 | 0 | 1 | 1 | 0 |
| XOR | 100 | 0 | 0 | 0 | 1 | 1 | 0 |
| XORI | 100 | 0 | 1 | 0 | 1 | 1 | 0 |
| LSH | 101 | 0 | 0 | 0 | 1 | 1 | 0 |
| LSHI | 101 | 0 | 1 | 0 | 1 | 1 | 0 |
| ASH | 110 | 0 | 0 | 0 | 1 | 1 | 0 |
| ASHI | 110 | 0 | 1 | 0 | 1 | 1 | 0 |
| CMP | 001 | 0 | 0 | 0 | 1 | 0 | 0 |
| CMPI | 001 | 0 | 1 | 0 | 1 | 0 | 0 |
| MOV | 001 | 0 | 0 | 0 | 0 | 1 | 0 |
| MOVI | 001 | 0 | 1 | 0 | 0 | 1 | 0 |
| LUI | 111 | 0 | 1 | 0 | 0 | 1 | 0 |
| LOAD | 001 | 0 | 0 | 0 | 0 | 1 | 1 |
| STOR | 001 | 0 | 0 | 0 | 0 | 0 | 1 |
| Bcond | 000 | 0 | 0 | 0 | 0 | 0 | 0 |
| Jcond | 000 | 0 | 0 | 0 | 0 | 0 | 0 |
| JAL | 000 | 0 | 0 | 0 | 0 | 1 | 0 |
| NOP | 011 | 0 | 0 | 0 | 0 | 0 | 0 |