|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 31 28 | 31 18 | 17 | 16 13 | 12 10 | 9 | 8 5 | 4 0 |
| Msk4 | Immediate10 | Na | Ra4 | Fmt3 | Nt | Rt4 | Opcode5 |

|  |  |  |  |
| --- | --- | --- | --- |
| 31 10 | 9 | 8 5 | 4 0 |
| Immediate22 | Nt | Rt4 | Opcode5 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 31 17 | 16 13 | 12 10 | 9 | 8 5 | 4 0 |
| Displacement17..3 | Rb4 | Cnd3 | Ds2 | Ra4 | Opcode5 |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 31 28 | 27 23 | 22 | 21 18 | 17 | 16 13 | 12 10 | 9 | 8 5 | 4 0 |
| Msk4 | Func5 | Nb | Rb4 | Na | Ra4 | Fmt3 | Nt | Rt4 | Opcode5 |

### Register-Immediate Vector Decode

|  |  |  |  |
| --- | --- | --- | --- |
| Fmt3 | Ra | Rt | Mask |
| 00 | scalar | scalar | No |
| 01 | scalar | scalar | Yes |
| 10 | vector | vector | No |
| 11 | vector | vector | Yes |

### Register-Register Vector Format

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Fmt3 | Rb | Ra | Rt | Mask |
| 000 | scalar | scalar | scalar | No |
| 001 | scalar | scalar | scalar | Yes |
| 010 | scalar | vector | vector | No |
| 011 | scalar | vector | vector | Yes |
| 100 | vector | vector | vector | No |
| 101 | vector | vector | vector | Yes |

|  |  |  |  |
| --- | --- | --- | --- |
| Mnemonic | Opcode |  |  |
| BRK | 0 |  |  |
| LUI | 1 |  |  |
| {R2} | 2 |  |  |
| AUIPC | 3 |  |  |
| ADDI | 4 |  |  |
| CMPI | 5 |  |  |
| MULI | 6 |  |  |
| DIV | 7 |  |  |
| ANDI | 8 |  |  |
| ORI | 9 |  |  |
| EORI | 10 |  |  |
| Bcc | 11 |  |  |
| JAL | 12 |  |  |
|  | 13 |  |  |
|  | 14 |  |  |
|  | 15 |  |  |
| LOAD | 16 |  |  |
| LOADZ | 17 |  |  |
| STORE | 18 |  |  |
|  | 19 |  |  |
|  | 20 |  |  |
|  | 21 |  |  |
|  | 22 |  |  |
|  | 23 |  |  |
|  | 24 |  |  |
|  | 25 |  |  |
|  | 26 |  |  |
|  | 27 |  |  |
|  | 28 |  |  |
|  | 29 |  |  |
|  | 30 |  |  |
|  | 31 |  |  |

|  |  |  |
| --- | --- | --- |
| Mnemonic | Cnd3 |  |
| BEQ | 0 |  |
| BNE | 1 |  |
| BLT | 2 |  |
| BLE | 3 |  |
| BLTU | 4 |  |
| BLEU | 5 |  |
|  | 6 |  |
|  | 7 |  |