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| **Instruction** | **Description** |
| ACCI Rd Rs Imm | Rd = SW[7:0]; ACC = Rd + Rs\*imm (or Rd + imm if Rs == %1) |
| MACI Rd Rs Imm | ACC = ACC + Rs\*imm; Rd = ACC + Rs\*imm (or ACC + imm if Rs == %1) |
| BEQ Rd Rs Imm | Rd = Rs + Rd |
| BNE Rd Rs Imm | Rd = lower half of Rs \* Rd (signed) |

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| **Operation** | **Instruction** |
| Load SW[7:0] into register %2 (Loading x1 and x2) | ACCI %2 %0 0 |
| Load an immediate operand into ACC (Loading b1 and b2) | ACCI %0 %1 5 |
| Multiply accumulate without write back (ACC += a11\*x1) | MACI %0 %2 b0110… |
| Multiply accumulate with write back (%4 = a12\*y1 + ACC) | MACI %4 %3 b1000… |
| Wait until SW[8] goes to 0/1 | BNE/BEQ %1 %0 0 |

