

| Instruction Name/Function | microMIPS64 | RV64GC | Thumb-2 |
|---|--------------------|-------------------------|--------------------|
| Load immediate | 8;7 | 32;6 | 8;8 |
| Load upper immediate | | 32;6 | |
| add immediate | 32;4 | 32;6 | 8;8;3 |
| add immediate word (32 bits) & sign extend | | 32;6 | |
| add immediate to stack pointer | 1;9 | 1;6 (adds 16x imm.) | 1;7 |
| add immediate to stack pointer store in reg. | 1;8;6 | 1;8;6 (adds 4x imm.) | |
| shift left/right logical | 8;8;3 (shift amt.) | 8;6(shift amt.) | 8;8;5 (shift amt.) |
| shift right arithmetic | | 8;6(shift amt.) | 8;8;5 (shift amt.) |
| AND immediate | 8;8;4 | 8;6 | 8;8 |
| move | 32;32 | 32;32 | 16;16 |
| add | 8;8;8 | 32;32 | 8;8;8 16;16 |
| AND, OR, XOR | 8;8 | 8;8 | 8;8 |
| subtract | 8;8;8 | 8;8 | 8;8;8 |
| add word, subtract word (32 bits) & sign extend | | 8;8 | |

FIGURE E.15 ALU instructions provided in RV64GC and the equivalents, if any, in the 16-bit instructions of micro-MIPS64 or Thumb-2. An entry shows the number of register sources/destinations, followed by the size of the immediate field, if it exists for that instruction. The add to stack pointer with scaled immediate instructions are used for adjusting the stack pointer and creating a pointer to a location on the stack. In Thumb, the add has two forms one with three operands from the 8-register subset (Lo) and one with two operands but any of 16-registers.