Table 1. First nineteen cycles of executing armtest.asm (all in hexadecimal, except Flags3:0 in binary)

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Cycle** | **reset** | **PC** | **Instr** | **SrcA** | **SrcB** | **Branch** | **AluResult** | **Flags3:0**  **[NZCV]** | **CondEx** | **WriteData** | **MemWrite** | **ReadData** |
| 1 | 1 | 00 | SUB R0, R15, R15 E04F000F | 8 | 8 | 0 | 0 | ? | 1 | 8 | 0 | x |
| 2 | 0 | 04 | ADD R2, R0, #5  E2802005 | 0 | 5 | 0 | 5 | ? | 1 | x | 0 | X |
| 3 | 0 | 08 | ADD R3, R0, #12 E280300C | 0 | C | 0 | C | ? | 1 | x | 0 | x |
| 4 |  | 0C | SUB R7, R3, #9  E2437009 | 3 | 9 | 0 | 3 |  | 1 |  | 0 |  |
| 5 |  | 10 | ORR R4, R7, R2  E1874002 | 7 | 2 | 0 | 3 |  | 1 |  | 0 |  |
| 6 |  | 14 | AND R5, R3, R4  E0035004 | 3 | 4 | 0 | C |  | 1 |  | 0 |  |
| 7 |  | 18 | ADD R5, R5, R4  E0855004 | 5 | 4 | 0 | B |  | 1 |  | 0 |  |
| 8 |  | 1C | SUBS R8, R5, R7  E0558007 | 5 | 7 | 0 | 8 | C | 1 |  | 0 |  |
| 9 |  | 20 | BEQ  0A00000C | 0 | C | 1 | X |  | 1 |  | 0 |  |
| 10 |  | 24 | SUBS R8, R3, R4  E0538004 | 3 | 4 | 0 | 5 |  | 1 |  | 0 |  |
| 11 |  | 28 | BGE AROUND  AA000000 | 0 | 0 | 1 | X |  | 1 |  | 0 |  |
| 12 |  | 2C | ADD R5, R0, #0  E2805000 | 0 | 0 | 0 | 0 |  | 1 |  | 0 |  |
| 13 |  | 30 | AROUND SUBS R8, R7, R2  E0578002 | 7 | 2 | 0 | 2 | N | 1 |  | 0 |  |
| 14 |  | 34 | ADDLT R7, R5, #1  B2857001 | 5 | 1 | 0 | C |  | 1 |  | 0 |  |
| 15 |  | 38 | SUB R7, R7, R2  E0477002 | 7 | 2 | 0 | 7 |  | 1 |  | 0 |  |
| 16 |  | 3C | STR R7, [R3, #84]  E5837054 | 3 | 4 | 0 | 7 |  | 1 |  | 0 |  |
| 17 |  | 40 | LDR R2, [R0, #96]  E5902060 | 0 | 0 | 0 | 7 |  | 1 |  | 0 |  |
| 18 |  | 44 | ADD R15, R15, R0  E08FF000 | 8 | 0 | 0 | PC |  | 1 |  | 0 |  |
| 19 |  | 48 | ADD R2, R0, #14  E280200E | 0 | E | 0 | E |  | 1 |  | 0 |  |
| 20 |  | 4C | B END  EA000001 | 0 | 1 | 1 | X |  | 1 |  | 0 |  |
| 21 |  | 50 | ADD R2, R0, #13  E280200D | 0 | D | 0 | D |  | 1 |  | 0 |  |
| 22 |  | 54 | ADD R2, R0, #10  E280200D | 0 | A | 0 | A |  | 1 |  | 0 |  |
| 23 |  | 58 | END STR R2, [R0, #100]  E5802064 | 0 | 4 | 0 | 7 |  | 1 |  | 1 |  |