<http://imrannazar.com/ARM-Opcode-Map>

The following is a full opcode map of instructions for the ARM7 and ARM9 series of CPU cores. Instructions added for ARM9 are highlighted in blue, and instructions specific to the M-extension are shown in green. The Thumb instruction set is also included, in Table 2.

| *Table 1. ARM Opcode Map.* | | | | | | | | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Bits 27-20** | **Bits 7-4** | | | | | | | | | | | | | | | |
| **0** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **A** | **B** | **C** | **D** | **E** | **F** |
| 00 | ANDlli | ANDllr | ANDlri | ANDlrr | ANDari | ANDarr | ANDrri | ANDrrr | AND lli | MUL | AND lri | STRHptrm | AND ari | LDRDptrm | AND rri | STRDptrm |
| 01 | ANDSlli | ANDSllr | ANDSlri | ANDSlrr | ANDSari | ANDSarr | ANDSrri | ANDSrrr | ANDSlli | MULS | ANDSlri | LDRHptrm | ANDSari | LDRSBptrm | ANDSrri | LDRSHptrm |
| 02 | EORlli | EORllr | EORlri | EORlrr | EORari | EORarr | EORrri | EORrrr | EOR lli | MLA | EOR lri | STRHptrm | EOR ari | LDRDptrm | EOR rri | STRDptrm |
| 03 | EORSlli | EORSllr | EORSlri | EORSlrr | EORSari | EORSarr | EORSrri | EORSrrr | EORSlli | MLAS | EORSlri | LDRHptrm | EORSari | LDRSBptrm | EORSrri | LDRSHptrm |
| 04 | SUBlli | SUBllr | SUBlri | SUBlrr | SUBari | SUBarr | SUBrri | SUBrrr | SUB lli |  | SUB lri | STRHptim | SUB ari | LDRDptim | SUB rri | STRDptim |
| 05 | SUBSlli | SUBSllr | SUBSlri | SUBSlrr | SUBSari | SUBSarr | SUBSrri | SUBSrrr | SUBSlli |  | SUBSlri | LDRHptim | SUBSari | LDRSBptim | SUBSrri | LDRSHptim |
| 06 | RSBlli | RSBllr | RSBlri | RSBlrr | RSBari | RSBarr | RSBrri | RSBrrr | RSB lli |  | RSB lri | STRHptim | RSB ari | LDRDptim | RSB rri | STRDptim |
| 07 | RSBSlli | RSBSllr | RSBSlri | RSBSlrr | RSBSari | RSBSarr | RSBSrri | RSBSrrr | RSBSlli |  | RSBSlri | LDRHptim | RSBSari | LDRSBptim | RSBSrri | LDRSHptim |
| 08 | ADDlli | ADDllr | ADDlri | ADDlrr | ADDari | ADDarr | ADDrri | ADDrrr | ADD lli | UMULL | ADD lri | STRHptrp | ADD ari | LDRDptrp | ADD rri | STRDptrp |
| 09 | ADDSlli | ADDSllr | ADDSlri | ADDSlrr | ADDSari | ADDSarr | ADDSrri | ADDSrrr | ADDSlli | UMULLS | ADDSlri | LDRHptrp | ADDSari | LDRSBptrp | ADDSrri | LDRSHptrp |
| 0A | ADClli | ADCllr | ADClri | ADClrr | ADCari | ADCarr | ADCrri | ADCrrr | ADC lli | UMLAL | ADC lri | STRHptrp | ADC ari | LDRDptrp | ADC rri | STRDptrp |
| 0B | ADCSlli | ADCSllr | ADCSlri | ADCSlrr | ADCSari | ADCSarr | ADCSrri | ADCSrrr | ADCSlli | UMLALS | ADCSlri | LDRHptrp | ADCSari | LDRSBptrp | ADCSrri | LDRSHptrp |
| 0C | SBClli | SBCllr | SBClri | SBClrr | SBCari | SBCarr | SBCrri | SBCrrr | SBC lli | SMULL | SBC lri | STRHptip | SBC ari | LDRDptip | SBC rri | STRDptip |
| 0D | SBCSlli | SBCSllr | SBCSlri | SBCSlrr | SBCSari | SBCSarr | SBCSrri | SBCSrrr | SBCSlli | SMULLS | SBCSlri | LDRHptip | SBCSari | LDRSBptip | SBCSrri | LDRSHptip |
| 0E | RSClli | RSCllr | RSClri | RSClrr | RSCari | RSCarr | RSCrri | RSCrrr | RSC lli | SMLAL | RSC lri | STRHptip | RSC ari | LDRDptip | RSC rri | STRDptip |
| 0F | RSCSlli | RSCSllr | RSCSlri | RSCSlrr | RSCSari | RSCSarr | RSCSrri | RSCSrrr | RSCSlli | SMLALS | RSCSlri | LDRHptip | RSCSari | LDRSBptip | RSCSrri | LDRSHptip |
| 10 | MRS rc |  | | | | QADD |  | | SMLABB | SWP | SMLATB | STRHofrm | SMLABT | LDRDofrm | SMLATT | STRDofrm |
| 11 | TSTSlli | TSTSllr | TSTSlri | TSTSlrr | TSTSari | TSTSarr | TSTSrri | TSTSrrr | TSTSlli |  | TSTSlri | LDRHofrm | TSTSari | LDRSBofrm | TSTSrri | LDRSHofrm |
| 12 | MSR rc | BX |  | BLXreg |  | QSUB |  | BKPT | SMLAWB |  | SMULWB | STRHprrm | SMLAWT | LDRDprrm | SMULWT | STRDprrm |
| 13 | TEQSlli | TEQSllr | TEQSlri | TEQSlrr | TEQSari | TEQSarr | TEQSrri | TEQSrrr | TEQSlli |  | TEQSlri | LDRHprrm | TEQSari | LDRSBprrm | TEQSrri | LDRSHprrm |
| 14 | MRS rs |  | | | | QDADD |  | | SMLALBB | SWPB | SMLALTB | STRHofim | SMLALBT | LDRDofim | SMLALTT | STRDofim |
| 15 | CMPSlli | CMPSllr | CMPSlri | CMPSlrr | CMPSari | CMPSarr | CMPSrri | CMPSrrr | CMPSlli |  | CMPSlri | LDRHofim | CMPSari | LDRSBofim | CMPSrri | LDRSHofim |
| 16 | MSR rs | CLZ |  | | | QDSUB |  | | SMULBB |  | SMULTB | STRHprim | SMULBT | LDRDprim | SMULTT | STRDprim |
| 17 | CMNSlli | CMNSllr | CMNSlri | CMNSlrr | CMNSari | CMNSarr | CMNSrri | CMNSrrr | CMNSlli |  | CMNSlri | LDRHprim | CMNSari | LDRSBprim | CMNSrri | LDRSHprim |
| 18 | ORRlli | ORRllr | ORRlri | ORRlrr | ORRari | ORRarr | ORRrri | ORRrrr | ORR lli |  | ORR lri | STRHofrp | ORR ari | LDRDofrp | ORR rri | STRDofrp |
| 19 | ORRSlli | ORRSllr | ORRSlri | ORRSlrr | ORRSari | ORRSarr | ORRSrri | ORRSrrr | ORRSlli |  | ORRSlri | LDRHofrp | ORRSari | LDRSBofrp | ORRSrri | LDRSHofrp |
| 1A | MOVlli | MOVllr | MOVlri | MOVlrr | MOVari | MOVarr | MOVrri | MOVrrr | MOV lli |  | MOV lri | STRHprrp | MOV ari | LDRDprrp | MOV rri | STRDprrp |
| 1B | MOVSlli | MOVSllr | MOVSlri | MOVSlrr | MOVSari | MOVSarr | MOVSrri | MOVSrrr | MOVSlli |  | MOVSlri | LDRHprrp | MOVSari | LDRSBprrp | MOVSrri | LDRSHprrp |
| 1C | BIClli | BICllr | BIClri | BIClrr | BICari | BICarr | BICrri | BICrrr | BIC lli |  | BIC lri | STRHofip | BIC ari | LDRDofip | BIC rri | STRDofip |
| 1D | BICSlli | BICSllr | BICSlri | BICSlrr | BICSari | BICSarr | BICSrri | BICSrrr | BICSlli |  | BICSlri | LDRHofip | BICSari | LDRSBofip | BICSrri | LDRSHofip |
| 1E | MVNlli | MVNllr | MVNlri | MVNlrr | MVNari | MVNarr | MVNrri | MVNrrr | MVN lli |  | MVN lri | STRHprip | MVN ari | LDRDprip | MVN rri | STRDprip |
| 1F | MVNSlli | MVNSllr | MVNSlri | MVNSlrr | MVNSari | MVNSarr | MVNSrri | MVNSrrr | MVNSlli |  | MVNSlri | LDRHprip | MVNSari | LDRSBprip | MVNSrri | LDRSHprip |
| 20 | AND imm | | | | | | | | | | | | | | | |
| 21 | ANDS imm | | | | | | | | | | | | | | | |
| 22 | EOR imm | | | | | | | | | | | | | | | |
| 23 | EORS imm | | | | | | | | | | | | | | | |
| 24 | SUB imm | | | | | | | | | | | | | | | |
| 25 | SUBS imm | | | | | | | | | | | | | | | |
| 26 | RSB imm | | | | | | | | | | | | | | | |
| 27 | RSBS imm | | | | | | | | | | | | | | | |
| 28 | ADD imm | | | | | | | | | | | | | | | |
| 29 | ADDS imm | | | | | | | | | | | | | | | |
| 2A | ADC imm | | | | | | | | | | | | | | | |
| 2B | ADCS imm | | | | | | | | | | | | | | | |
| 2C | SBC imm | | | | | | | | | | | | | | | |
| 2D | SBCS imm | | | | | | | | | | | | | | | |
| 2E | RSC imm | | | | | | | | | | | | | | | |
| 2F | RSCS imm | | | | | | | | | | | | | | | |
| 30 |  | | | | | | | | | | | | | | | |
| 31 | TSTS imm | | | | | | | | | | | | | | | |
| 32 | MSR ic | | | | | | | | | | | | | | | |
| 33 | TEQS imm | | | | | | | | | | | | | | | |
| 34 |  | | | | | | | | | | | | | | | |
| 35 | CMPS imm | | | | | | | | | | | | | | | |
| 36 | MSR is | | | | | | | | | | | | | | | |
| 37 | CMNS imm | | | | | | | | | | | | | | | |
| 38 | ORR imm | | | | | | | | | | | | | | | |
| 39 | ORRS imm | | | | | | | | | | | | | | | |
| 3A | MOV imm | | | | | | | | | | | | | | | |
| 3B | MOVS imm | | | | | | | | | | | | | | | |
| 3C | BIC imm | | | | | | | | | | | | | | | |
| 3D | BICS imm | | | | | | | | | | | | | | | |
| 3E | MVN imm | | | | | | | | | | | | | | | |
| 3F | MVNS imm | | | | | | | | | | | | | | | |
| 40 | STR ptim | | | | | | | | | | | | | | | |
| 41 | LDR ptim | | | | | | | | | | | | | | | |
| 42 | STRT ptim | | | | | | | | | | | | | | | |
| 43 | LDRT ptim | | | | | | | | | | | | | | | |
| 44 | STRB ptim | | | | | | | | | | | | | | | |
| 45 | LDRB ptim | | | | | | | | | | | | | | | |
| 46 | STRBT ptim | | | | | | | | | | | | | | | |
| 47 | LDRBT ptim | | | | | | | | | | | | | | | |
| 48 | STR ptip | | | | | | | | | | | | | | | |
| 49 | LDR ptip | | | | | | | | | | | | | | | |
| 4A | STRT ptip | | | | | | | | | | | | | | | |
| 4B | LDRT ptip | | | | | | | | | | | | | | | |
| 4C | STRB ptip | | | | | | | | | | | | | | | |
| 4D | LDRB ptip | | | | | | | | | | | | | | | |
| 4E | STRBT ptip | | | | | | | | | | | | | | | |
| 4F | LDRBT ptip | | | | | | | | | | | | | | | |
| 50 | STR ofim | | | | | | | | | | | | | | | |
| 51 | LDR ofim | | | | | | | | | | | | | | | |
| 52 | STR prim | | | | | | | | | | | | | | | |
| 53 | LDR prim | | | | | | | | | | | | | | | |
| 54 | STRB ofim | | | | | | | | | | | | | | | |
| 55 | LDRB ofim | | | | | | | | | | | | | | | |
| 56 | STRB prim | | | | | | | | | | | | | | | |
| 57 | LDRB prim | | | | | | | | | | | | | | | |
| 58 | STR ofip | | | | | | | | | | | | | | | |
| 59 | LDR ofip | | | | | | | | | | | | | | | |
| 5A | STR prip | | | | | | | | | | | | | | | |
| 5B | LDR prip | | | | | | | | | | | | | | | |
| 5C | STRB ofip | | | | | | | | | | | | | | | |
| 5D | LDRB ofip | | | | | | | | | | | | | | | |
| 5E | STRB prip | | | | | | | | | | | | | | | |
| 5F | LDRB prip | | | | | | | | | | | | | | | |
| 60 | STRptrmll |  | STRptrmlr |  | STRptrmar |  | STRptrmrr |  | STRptrmll |  | STRptrmlr |  | STRptrmar |  | STRptrmrr |  |
| 61 | LDRptrmll |  | LDRptrmlr |  | LDRptrmar |  | LDRptrmrr |  | LDRptrmll |  | LDRptrmlr |  | LDRptrmar |  | LDRptrmrr |  |
| 62 | STRTptrmll |  | STRTptrmlr |  | STRTptrmar |  | STRTptrmrr |  | STRTptrmll |  | STRTptrmlr |  | STRTptrmar |  | STRTptrmrr |  |
| 63 | LDRTptrmll |  | LDRTptrmlr |  | LDRTptrmar |  | LDRTptrmrr |  | LDRTptrmll |  | LDRTptrmlr |  | LDRTptrmar |  | LDRTptrmrr |  |
| 64 | STRBptrmll |  | STRBptrmlr |  | STRBptrmar |  | STRBptrmrr |  | STRBptrmll |  | STRBptrmlr |  | STRBptrmar |  | STRBptrmrr |  |
| 65 | LDRBptrmll |  | LDRBptrmlr |  | LDRBptrmar |  | LDRBptrmrr |  | LDRBptrmll |  | LDRBptrmlr |  | LDRBptrmar |  | LDRBptrmrr |  |
| 66 | STRBTptrmll |  | STRBTptrmlr |  | STRBTptrmar |  | STRBTptrmrr |  | STRBTptrmll |  | STRBTptrmlr |  | STRBTptrmar |  | STRBTptrmrr |  |
| 67 | LDRBTptrmll |  | LDRBTptrmlr |  | LDRBTptrmar |  | LDRBTptrmrr |  | LDRBTptrmll |  | LDRBTptrmlr |  | LDRBTptrmar |  | LDRBTptrmrr |  |
| 68 | STRptrpll |  | STRptrplr |  | STRptrpar |  | STRptrprr |  | STRptrpll |  | STRptrplr |  | STRptrpar |  | STRptrprr |  |
| 69 | LDRptrpll |  | LDRptrplr |  | LDRptrpar |  | LDRptrprr |  | LDRptrpll |  | LDRptrplr |  | LDRptrpar |  | LDRptrprr |  |
| 6A | STRTptrpll |  | STRTptrplr |  | STRTptrpar |  | STRTptrprr |  | STRTptrpll |  | STRTptrplr |  | STRTptrpar |  | STRTptrprr |  |
| 6B | LDRTptrpll |  | LDRTptrplr |  | LDRTptrpar |  | LDRTptrprr |  | LDRTptrpll |  | LDRTptrplr |  | LDRTptrpar |  | LDRTptrprr |  |
| 6C | STRBptrpll |  | STRBptrplr |  | STRBptrpar |  | STRBptrprr |  | STRBptrpll |  | STRBptrplr |  | STRBptrpar |  | STRBptrprr |  |
| 6D | LDRBptrpll |  | LDRBptrplr |  | LDRBptrpar |  | LDRBptrprr |  | LDRBptrpll |  | LDRBptrplr |  | LDRBptrpar |  | LDRBptrprr |  |
| 6E | STRBTptrpll |  | STRBTptrplr |  | STRBTptrpar |  | STRBTptrprr |  | STRBTptrpll |  | STRBTptrplr |  | STRBTptrpar |  | STRBTptrprr |  |
| 6F | LDRBTptrpll |  | LDRBTptrplr |  | LDRBTptrpar |  | LDRBTptrprr |  | LDRBTptrpll |  | LDRBTptrplr |  | LDRBTptrpar |  | LDRBTptrprr |  |
| 70 | STRofrmll |  | STRofrmlr |  | STRofrmar |  | STRofrmrr |  | STRofrmll |  | STRofrmlr |  | STRofrmar |  | STRofrmrr |  |
| 71 | LDRofrmll |  | LDRofrmlr |  | LDRofrmar |  | LDRofrmrr |  | LDRofrmll |  | LDRofrmlr |  | LDRofrmar |  | LDRofrmrr |  |
| 72 | STRprrmll |  | STRprrmlr |  | STRprrmar |  | STRprrmrr |  | STRprrmll |  | STRprrmlr |  | STRprrmar |  | STRprrmrr |  |
| 73 | LDRprrmll |  | LDRprrmlr |  | LDRprrmar |  | LDRprrmrr |  | LDRprrmll |  | LDRprrmlr |  | LDRprrmar |  | LDRprrmrr |  |
| 74 | STRBofrmll |  | STRBofrmlr |  | STRBofrmar |  | STRBofrmrr |  | STRBofrmll |  | STRBofrmlr |  | STRBofrmar |  | STRBofrmrr |  |
| 75 | LDRBofrmll |  | LDRBofrmlr |  | LDRBofrmar |  | LDRBofrmrr |  | LDRBofrmll |  | LDRBofrmlr |  | LDRBofrmar |  | LDRBofrmrr |  |
| 76 | STRBprrmll |  | STRBprrmlr |  | STRBprrmar |  | STRBprrmrr |  | STRBprrmll |  | STRBprrmlr |  | STRBprrmar |  | STRBprrmrr |  |
| 77 | LDRBprrmll |  | LDRBprrmlr |  | LDRBprrmar |  | LDRBprrmrr |  | LDRBprrmll |  | LDRBprrmlr |  | LDRBprrmar |  | LDRBprrmrr |  |
| 78 | STRofrpll |  | STRofrplr |  | STRofrpar |  | STRofrprr |  | STRofrpll |  | STRofrplr |  | STRofrpar |  | STRofrprr |  |
| 79 | LDRofrpll |  | LDRofrplr |  | LDRofrpar |  | LDRofrprr |  | LDRofrpll |  | LDRofrplr |  | LDRofrpar |  | LDRofrprr |  |
| 7A | STRprrpll |  | STRprrplr |  | STRprrpar |  | STRprrprr |  | STRprrpll |  | STRprrplr |  | STRprrpar |  | STRprrprr |  |
| 7B | LDRprrpll |  | LDRprrplr |  | LDRprrpar |  | LDRprrprr |  | LDRprrpll |  | LDRprrplr |  | LDRprrpar |  | LDRprrprr |  |
| 7C | STRBofrpll |  | STRBofrplr |  | STRBofrpar |  | STRBofrprr |  | STRBofrpll |  | STRBofrplr |  | STRBofrpar |  | STRBofrprr |  |
| 7D | LDRBofrpll |  | LDRBofrplr |  | LDRBofrpar |  | LDRBofrprr |  | LDRBofrpll |  | LDRBofrplr |  | LDRBofrpar |  | LDRBofrprr |  |
| 7E | STRBprrpll |  | STRBprrplr |  | STRBprrpar |  | STRBprrprr |  | STRBprrpll |  | STRBprrplr |  | STRBprrpar |  | STRBprrprr |  |
| 7F | LDRBprrpll |  | LDRBprrplr |  | LDRBprrpar |  | LDRBprrprr |  | LDRBprrpll |  | LDRBprrplr |  | LDRBprrpar |  | LDRBprrprr |  |
| 80 | STMDA | | | | | | | | | | | | | | | |
| 81 | LDMDA | | | | | | | | | | | | | | | |
| 82 | STMDA w | | | | | | | | | | | | | | | |
| 83 | LDMDA w | | | | | | | | | | | | | | | |
| 84 | STMDA u | | | | | | | | | | | | | | | |
| 85 | LDMDA u | | | | | | | | | | | | | | | |
| 86 | STMDA uw | | | | | | | | | | | | | | | |
| 87 | LDMDA uw | | | | | | | | | | | | | | | |
| 88 | STMIA | | | | | | | | | | | | | | | |
| 89 | LDMIA | | | | | | | | | | | | | | | |
| 8A | STMIA w | | | | | | | | | | | | | | | |
| 8B | LDMIA w | | | | | | | | | | | | | | | |
| 8C | STMIA u | | | | | | | | | | | | | | | |
| 8D | LDMIA u | | | | | | | | | | | | | | | |
| 8E | STMIA uw | | | | | | | | | | | | | | | |
| 8F | LDMIA uw | | | | | | | | | | | | | | | |
| 90 | STMDB | | | | | | | | | | | | | | | |
| 91 | LDMDB | | | | | | | | | | | | | | | |
| 92 | STMDB w | | | | | | | | | | | | | | | |
| 93 | LDMDB w | | | | | | | | | | | | | | | |
| 94 | STMDB u | | | | | | | | | | | | | | | |
| 95 | LDMDB u | | | | | | | | | | | | | | | |
| 96 | STMDB uw | | | | | | | | | | | | | | | |
| 97 | LDMDB uw | | | | | | | | | | | | | | | |
| 98 | STMIB | | | | | | | | | | | | | | | |
| 99 | LDMIB | | | | | | | | | | | | | | | |
| 9A | STMIB w | | | | | | | | | | | | | | | |
| 9B | LDMIB w | | | | | | | | | | | | | | | |
| 9C | STMIB u | | | | | | | | | | | | | | | |
| 9D | LDMIB u | | | | | | | | | | | | | | | |
| 9E | STMIB uw | | | | | | | | | | | | | | | |
| 9F | LDMIB uw | | | | | | | | | | | | | | | |
| A0 | B | | | | | | | | | | | | | | | |
| A1 |
| A2 |
| A3 |
| A4 |
| A5 |
| A6 |
| A7 |
| A8 |
| A9 |
| AA |
| AB |
| AC |
| AD |
| AE |
| AF |
| B0 | BL | | | | | | | | | | | | | | | |
| B1 |
| B2 |
| B3 |
| B4 |
| B5 |
| B6 |
| B7 |
| B8 |
| B9 |
| BA |
| BB |
| BC |
| BD |
| BE |
| BF |
| C0 | STC ofm | | | | | | | | | | | | | | | |
| C1 | LDC ofm | | | | | | | | | | | | | | | |
| C2 | STC prm | | | | | | | | | | | | | | | |
| C3 | LDC prm | | | | | | | | | | | | | | | |
| C4 | STC ofm | | | | | | | | | | | | | | | |
| C5 | LDC ofm | | | | | | | | | | | | | | | |
| C6 | STC prm | | | | | | | | | | | | | | | |
| C7 | LDC prm | | | | | | | | | | | | | | | |
| C8 | STC ofp | | | | | | | | | | | | | | | |
| C9 | LDC ofp | | | | | | | | | | | | | | | |
| CA | STC prp | | | | | | | | | | | | | | | |
| CB | LDC prp | | | | | | | | | | | | | | | |
| CC | STC ofp | | | | | | | | | | | | | | | |
| CD | LDC ofp | | | | | | | | | | | | | | | |
| CE | STC prp | | | | | | | | | | | | | | | |
| CF | LDC prp | | | | | | | | | | | | | | | |
| D0 | STC unm | | | | | | | | | | | | | | | |
| D1 | LDC unm | | | | | | | | | | | | | | | |
| D2 | STC ptm | | | | | | | | | | | | | | | |
| D3 | LDC ptm | | | | | | | | | | | | | | | |
| D4 | STC unm | | | | | | | | | | | | | | | |
| D5 | LDC unm | | | | | | | | | | | | | | | |
| D6 | STC ptm | | | | | | | | | | | | | | | |
| D7 | LDC ptm | | | | | | | | | | | | | | | |
| D8 | STC unp | | | | | | | | | | | | | | | |
| D9 | LDC unp | | | | | | | | | | | | | | | |
| DA | STC ptp | | | | | | | | | | | | | | | |
| DB | LDC ptp | | | | | | | | | | | | | | | |
| DC | STC unp | | | | | | | | | | | | | | | |
| DD | LDC unp | | | | | | | | | | | | | | | |
| DE | STC ptp | | | | | | | | | | | | | | | |
| DF | LDC ptp | | | | | | | | | | | | | | | |
| E0 | CDP | MCR | CDP | MCR | CDP | MCR | CDP | MCR | CDP | MCR | CDP | MCR | CDP | MCR | CDP | MCR |
| E1 | MRC | MRC | MRC | MRC | MRC | MRC | MRC | MRC |
| E2 | MCR | MCR | MCR | MCR | MCR | MCR | MCR | MCR |
| E3 | MRC | MRC | MRC | MRC | MRC | MRC | MRC | MRC |
| E4 | MCR | MCR | MCR | MCR | MCR | MCR | MCR | MCR |
| E5 | MRC | MRC | MRC | MRC | MRC | MRC | MRC | MRC |
| E6 | MCR | MCR | MCR | MCR | MCR | MCR | MCR | MCR |
| E7 | MRC | MRC | MRC | MRC | MRC | MRC | MRC | MRC |
| E8 | MCR | MCR | MCR | MCR | MCR | MCR | MCR | MCR |
| E9 | MRC | MRC | MRC | MRC | MRC | MRC | MRC | MRC |
| EA | MCR | MCR | MCR | MCR | MCR | MCR | MCR | MCR |
| EB | MRC | MRC | MRC | MRC | MRC | MRC | MRC | MRC |
| EC | MCR | MCR | MCR | MCR | MCR | MCR | MCR | MCR |
| ED | MRC | MRC | MRC | MRC | MRC | MRC | MRC | MRC |
| EE | MCR | MCR | MCR | MCR | MCR | MCR | MCR | MCR |
| EF | MRC | MRC | MRC | MRC | MRC | MRC | MRC | MRC |
| F0 | SWI | | | | | | | | | | | | | | | |
| F1 |
| F2 |
| F3 |
| F4 |
| F5 |
| F6 |
| F7 |
| F8 |
| F9 |
| FA |
| FB |
| FC |
| FD |
| FE |
| FF |

| *Table 2. Thumb Opcode Map.* | | | | | | | | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Bits 15-12** | **Bits 11-8** | | | | | | | | | | | | | | | |
| **0** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **A** | **B** | **C** | **D** | **E** | **F** |
| 0 | LSL imm | | | | | | | | LSR imm | | | | | | | |
| 1 | ASR imm | | | | | | | | ADD reg | | SUB reg | | ADD imm3 | | SUB imm3 | |
| 2 | MOVi8r0 | MOVi8r1 | MOVi8r2 | MOVi8r3 | MOVi8r4 | MOVi8r5 | MOVi8r6 | MOVi8r7 | CMPi8r0 | CMPi8r1 | CMPi8r2 | CMPi8r3 | CMPi8r4 | CMPi8r5 | CMPi8r6 | CMPi8r7 |
| 3 | ADDi8r0 | ADDi8r1 | ADDi8r2 | ADDi8r3 | ADDi8r4 | ADDi8r5 | ADDi8r6 | ADDi8r7 | SUBi8r0 | SUBi8r1 | SUBi8r2 | SUBi8r3 | SUBi8r4 | SUBi8r5 | SUBi8r6 | SUBi8r7 |
| 4 | DP g1 | DP g2 | DP g3 | DP g4 | ADDH | CMPH | MOVH | BXreg | LDRPCr0 | LDRPCr1 | LDRPCr2 | LDRPCr3 | LDRPCr4 | LDRPCr5 | LDRPCr6 | LDRPCr7 |
| 5 | STR reg | | STRH reg | | STRB reg | | LDRSB reg | | LDR reg | | LDRH reg | | LDRB reg | | LDRSH reg | |
| 6 | STR imm5 | | | | | | | | LDR imm5 | | | | | | | |
| 7 | STRB imm5 | | | | | | | | LDRB imm5 | | | | | | | |
| 8 | STRH imm5 | | | | | | | | LDRH imm5 | | | | | | | |
| 9 | STRSPr0 | STRSPr1 | STRSPr2 | STRSPr3 | STRSPr4 | STRSPr5 | STRSPr6 | STRSPr7 | LDRSPr0 | LDRSPr1 | LDRSPr2 | LDRSPr3 | LDRSPr4 | LDRSPr5 | LDRSPr6 | LDRSPr7 |
| A | ADDPCr0 | ADDPCr1 | ADDPCr2 | ADDPCr3 | ADDPCr4 | ADDPCr5 | ADDPCr6 | ADDPCr7 | ADDSPr0 | ADDSPr1 | ADDSPr2 | ADDSPr3 | ADDSPr4 | ADDSPr5 | ADDSPr6 | ADDSPr7 |
| B | ADDSPimm7 |  | | | PUSH | PUSHlr |  | | | | | | POP | POPpc | BKPT |  |
| C | STMIAr0 | STMIAr1 | STMIAr2 | STMIAr3 | STMIAr4 | STMIAr5 | STMIAr6 | STMIAr7 | LDMIAr0 | LDMIAr1 | LDMIAr2 | LDMIAr3 | LDMIAr4 | LDMIAr5 | LDMIAr6 | LDMIAr7 |
| D | BEQ | BNE | BCS | BCC | BMI | BPL | BVS | BVC | BHI | BLS | BGE | BLT | BGT | BLE |  | SWI |
| E | B | | | | | | | | BLX off | | | | | | | |
| F | BL setup | | | | | | | | BL off | | | | | | | |

| *Table 2A. Thumb Opcode Map - Register/Register Data Processing.* | | | | |
| --- | --- | --- | --- | --- |
| **Bits 9-8** | **Bits 7-6** | | | |
| **0** | **1** | **2** | **3** |
| 0 | AND | EOR | LSL | LSR |
| 1 | ASR | ADD | SUB | ROR |
| 2 | TST | NEG | CMP | CMN |
| 3 | ORR | MUL | BIC | MVN |

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