Instruction 0, PC = 0x00

LDR R1, LEDS: 0b1110,0101,1001,1111,0001,0001,1111,1000= 0xE59F11F8

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 31:28 | | | | 27:26 | | 25 | 24 | 23 | 22 | 21 | 20 | 19:16 | | | | 15:12 | | | | 11:0 | | | | | | | | | | | |
| 1 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 |

op = 01: Mem

U = 1

offset = 1F8 = :

cond = 1110

Rn = R15

Rd = R1

L = 1

= 0

PW = 10, Offset

Instruction 1, PC = 0x04

LDR R2, DIPS: 0b1110,0101,1001,1111,0010,0001,1111,1000= 0xE59F21F8

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 31:28 | | | | 27:26 | | 25 | 24 | 23 | 22 | 21 | 20 | 19:16 | | | | 15:12 | | | | 11:0 | | | | | | | | | | | |
| 1 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 |

op = 01: Mem

U = 1

offset = 1F8 = :

cond = 1110

Rn = R15

Rd = R2

L = 1

= 0

PW = 10, Offset

Instruction 2, PC = 0x08

LDR R3, PBS: 0b1110,0101,1001,1111,0011,0001,1111,1000= 0xE59F31F8

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 31:28 | | | | 27:26 | | 25 | 24 | 23 | 22 | 21 | 20 | 19:16 | | | | 15:12 | | | | 11:0 | | | | | | | | | | | |
| 1 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 |

op = 01: Mem

U = 1

offset = 1F8 = :

cond = 1110

Rn = R15

Rd = R3

L = 1

= 0

PW = 10, Offset

Instruction 3, PC = 0x0C

LDR R4, SEVENSEG: 0b1110,0101,1001,1111,0100,0010,0000,0100= 0xE59F4204

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 31:28 | | | | 27:26 | | 25 | 24 | 23 | 22 | 21 | 20 | 19:16 | | | | 15:12 | | | | 11:0 | | | | | | | | | | | |
| 1 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |

op = 01: Mem

U = 1

offset = 204 = :

cond = 1110

Rn = R15

Rd = R4

L = 1

= 0

PW = 10, Offset

Instruction 4, PC = 0x10

LDR R5, DELAY\_VAL: 0b1110,0101,1001,1111,0101,0010,0001,0100=0xE59F5214

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 31:28 | | | | 27:26 | | 25 | 24 | 23 | 22 | 21 | 20 | 19:16 | | | | 15:12 | | | | 11:0 | | | | | | | | | | | |
| 1 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 |

op = 01: Mem

U = 1

offset = 214 = :

cond = 1110

Rn = R15

Rd = R5

L = 1

= 0

PW = 10, Offset

Instruction 5, PC = 0x14

LDR R6, ZERO: 0b1110,0101,1001,1111,0110,0010,0000,0000=0xE59F6200

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 31:28 | | | | 27:26 | | 25 | 24 | 23 | 22 | 21 | 20 | 19:16 | | | | 15:12 | | | | 11:0 | | | | | | | | | | | |
| 1 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

op = 01: Mem

U = 1

offset = 200 = :

cond = 1110

Rn = R15

Rd = R6

L = 1

= 0

PW = 10, Offset

Instruction 6, PC = 0x18

LDR R7, DELAY\_VAL: 0b1110,0101,1001,1111,0111,0010,0000,1100=0xE59F720C

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 31:28 | | | | 27:26 | | 25 | 24 | 23 | 22 | 21 | 20 | 19:16 | | | | 15:12 | | | | 11:0 | | | | | | | | | | | |
| 1 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 |

op = 01: Mem

U = 1

offset = 20C = :

cond = 1110

Rn = R15

Rd = R7

L = 1

= 0

PW = 10, Offset

Instruction 7, PC = 0x1C

LDR R8, DELAY\_VAL: 0b1110 0101 1001 1111 1000 0010 0000 1000=0xE59F8208

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 31:28 | | | | 27:26 | | 25 | 24 | 23 | 22 | 21 | 20 | 19:16 | | | | 15:12 | | | | 11:0 | | | | | | | | | | | |
| 1 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |

op = 01: Mem

U = 1

offset = 208 = :

cond = 1110

Rn = R15

Rd = R8

L = 1

= 0

PW = 10, Offset

Instruction 8, PC = 0x20

LDR R11, HUNDRED: 0b1110 0101 1001 1111 1011 0001 1111 1100=0xE59FB1FC

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 31:28 | | | | 27:26 | | 25 | 24 | 23 | 22 | 21 | 20 | 19:16 | | | | 15:12 | | | | 11:0 | | | | | | | | | | | |
| 1 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 |

op = 01: Mem

U = 1

offset = 1FC = :

cond = 1110

Rn = R15

Rd = R11

L = 1

= 0

PW = 10, Offset



Instruction 9, PC = 0x24

ORR R12, R6, #255: 0b 1110 0011 1000 0110 1100 0000 1111 1111= 0xE386C0FF

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 31:28 | | | | 27:26 | | 25 | 24:21 | | | | 20 | 19:16 | | | | 15:12 | | | | 11:8 | | | | 7:0 | | | | | | | |
| 1 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

Rd = R12

rot

cond = 1110

Imm8 = FF = :

Rn = R6

S = 0

cmd = 1100

op = 00: DP

Instruction 10, PC = 0x28

ADDS R13, R6, R12, ASR #7: 0b1110 0000 1001 0110 1101 0011 1100 1100=0xE096D3CC

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 31:28 | | | | 27:26 | | 25 | 24:21 | | | | 20 | 19:16 | | | | 15:12 | | | | 11:5 | | | | | | | 4 | 3:0 | | | |
| 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 |

Rm = R12 = :

Rn = R6

shamt5 = 7

cond = 1110

M = 0

S = 1

I = 0

Rd = R13

cmd = 0100

op = 00: DP

sh = 10



Instruction 11, PC = 0x2C

LDR R13, LARGE\_VAL: 0b1110 0101 1001 1111 1101 0001 1111 0100=0xE59FD1F4

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 31:28 | | | | 27:26 | | 25 | 24 | 23 | 22 | 21 | 20 | 19:16 | | | | 15:12 | | | | 11:0 | | | | | | | | | | | |
| 1 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 |

op = 01: Mem

U = 1

offset = 1F4 = :

cond = 1110

Rn = R15

Rd = R13

L = 1

= 0

PW = 10, Offset

Instruction 12, PC = 0x30

ADDS R12, R13, R12, LSR #1: 0b 1110 0000 1001 1101 1100 0000 1010 1100= 0x E09DC0AC

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 31:28 | | | | 27:26 | | 25 | 24:21 | | | | 20 | 19:16 | | | | 15:12 | | | | 11:5 | | | | | | | 4 | 3:0 | | | |
| 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 0 |

Rm = R12 = :

Rn = R13

shamt5 = 1

cond = 1110

M = 0

S = 1

I = 0

Rd = R12

cmd = 0100

op = 00: DP

sh = 01

Instruction 13, PC = 0x34

ANDVS R12, R12, R6: 0b 0110 0000 0000 1100 1100 0000 0000 0110= 0x 600CC006

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 31:28 | | | | 27:26 | | 25 | 24:21 | | | | 20 | 19:16 | | | | 15:12 | | | | 11:5 | | | | | | | 4 | 3:0 | | | |
| 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 |

Rm = R6 = :

Rn = R12

shamt5 = 0

cond = 0110

M = 0

S = 0

I = 0

Rd = R12

cmd = 0000

op = 00: DP

sh = 00

Instruction 14, PC = 0x38

CMPMI R12, R12: 0b 0100 0001 0101 1100 0000 0000 0000 1100= 0x 415C000C

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 31:28 | | | | 27:26 | | 25 | 24:21 | | | | 20 | 19:16 | | | | 15:12 | | | | 11:5 | | | | | | | 4 | 3:0 | | | |
| 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 |

Rm = R12 = :

Rn = R12

shamt5 = 0

cond = 0100

M = 0

S = 1

I = 0

Rd =

cmd = 1010

op = 00: DP

sh = 00

Instruction 15, PC = 0x3C

CMNEQ R13, R13, LSL #1: 0b 0000 0001 0111 1101 0000 0000 1000 1101= 0x 017D008D

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 31:28 | | | | 27:26 | | 25 | 24:21 | | | | 20 | 19:16 | | | | 15:12 | | | | 11:5 | | | | | | | 4 | 3:0 | | | |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 |

Rm = R13 = :

Rn = R13

shamt5 = 1

cond = 0000

M = 0

S = 1

I = 0

Rd =

cmd = 1011

op = 00: DP

sh = 00

Instruction 16, PC = 0x40

LDRCS R12, [R1, #4]: 0b0010 0101 1001 0001 1100 0000 0000 0100=0x2591C004

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 31:28 | | | | 27:26 | | 25 | 24 | 23 | 22 | 21 | 20 | 19:16 | | | | 15:12 | | | | 11:0 | | | | | | | | | | | |
| 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |

op = 01: Mem

U = 1

offset = 4 = :

cond = 0010

Rn = R1

Rd = R12

L = 1

= 0

PW = 10, Offset



Instruction 17, PC = 0x44

STRCS R12, [R2, #-4]: 0b0010 0101 0000 0010 1100 0000 0000 0100=0x2502C004

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 31:28 | | | | 27:26 | | 25 | 24 | 23 | 22 | 21 | 20 | 19:16 | | | | 15:12 | | | | 11:0 | | | | | | | | | | | |
| 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |

op = 01: Mem

U = 0

offset = 4 = :

cond = 0010

Rn = R2

Rd = R12

L = 0

= 0

PW = 10, Offset

Instruction 18, PC = 0x48

SUBCSS R11, R11, #1: 0b 0010 0010 0101 1011 1011 0000 0000 0001= 0x 225BB001

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 31:28 | | | | 27:26 | | 25 | 24:21 | | | | 20 | 19:16 | | | | 15:12 | | | | 11:8 | | | | 7:0 | | | | | | | |
| 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |

Rd = R11

rot

cond = 0010

Imm8 = 1 = :

Rn = R11

S = 1

cmd = 0010

op = 00: DP

Instruction 19, PC = 0x4C

BGE instructions: 0b1010 1010 1111 1111 1111 1111 1111 0100= 0xAAFFFFF4

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 31:28 | | | | 27:26 | | 25 | 24 | 23:0 | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 |

cond = 1100

Imm24 = 0xFFFFF4

op = 10

1L = 10

Instruction 20, PC = 0x50

B main\_loop: 0b1110 1010 1111 1111 1111 1111 1111 1111= 0xEAFFFFFF

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 31:28 | | | | 27:26 | | 25 | 24 | 23:0 | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

cond = 1110

Imm24 = 0xFFFFFF

op = 10

1L = 10

Instruction 21, PC = 0x54

CMP R5, #250: 0b 1110 0011 0101 0101 0000 0000 1111 1010= 0x E35500FA

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 31:28 | | | | 27:26 | | 25 | 24:21 | | | | 20 | 19:16 | | | | 15:12 | | | | 11:8 | | | | 7:0 | | | | | | | |
| 1 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 0 |

Rd =

rot

cond = 1110

Imm8 = FA= :

Rn = R5

S = 1

cmd = 1010

op = 00: DP



Instruction 22, PC = 0x58

LDRLE R6, SHOW\_TEN: 0b1101 0101 1001 1111 0110 0001 1101 0000=0xD59F61D0

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 31:28 | | | | 27:26 | | 25 | 24 | 23 | 22 | 21 | 20 | 19:16 | | | | 15:12 | | | | 11:0 | | | | | | | | | | | |
| 1 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 |

op = 01: Mem

U = 1

offset = 1D0 = :

cond = 1101

Rn = R15

Rd = R6

L = 1

= 0

PW = 10, Offset

Instruction 23, PC = 0x5C

CMP R5, #225: 0b 1110 0011 0101 0101 0000 0000 1110 0001= 0x E35500E1

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 31:28 | | | | 27:26 | | 25 | 24:21 | | | | 20 | 19:16 | | | | 15:12 | | | | 11:8 | | | | 7:0 | | | | | | | |
| 1 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 1 |

Rd =

rot

cond = 1110

Imm8 = E1= :

Rn = R5

S = 1

cmd = 1010

op = 00: DP



Instruction 24, PC = 0x60

STRGT R6, [R4]: 0b1100 0101 1000 0100 0110 0000 0000 0000=0xC5846000

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 31:28 | | | | 27:26 | | 25 | 24 | 23 | 22 | 21 | 20 | 19:16 | | | | 15:12 | | | | 11:0 | | | | | | | | | | | |
| 1 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

op = 01: Mem

U = 1

offset = 0 = :

cond = 1100

Rn = R4

Rd = R6

L = 0

= 0

PW = 10, Offset

Instruction 25, PC = 0x64

CMP R5, #225: 0b 1110 0011 0101 0101 0000 0000 1110 0001= 0x E35500E1

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 31:28 | | | | 27:26 | | 25 | 24:21 | | | | 20 | 19:16 | | | | 15:12 | | | | 11:8 | | | | 7:0 | | | | | | | |
| 1 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 1 |

Rd =

rot

cond = 1110

Imm8 = E1= :

Rn = R5

S = 1

cmd = 1010

op = 00: DP



Instruction 26, PC = 0x68

LDRLE R6, SHOW\_NINE: 0b1101 0101 1001 1111 0110 0001 1100 0100=0x D59F61C4

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 31:28 | | | | 27:26 | | 25 | 24 | 23 | 22 | 21 | 20 | 19:16 | | | | 15:12 | | | | 11:0 | | | | | | | | | | | |
| 1 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 |

op = 01: Mem

U = 1

offset = 1C4 = :

cond = 1101

Rn = R15

Rd = R6

L = 1

= 0

PW = 10, Offset

Instruction 27, PC = 0x6C

CMP R5, #200: 0b 1110 0011 0101 0101 0000 0000 1100 1000= 0x E35500C8

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 31:28 | | | | 27:26 | | 25 | 24:21 | | | | 20 | 19:16 | | | | 15:12 | | | | 11:8 | | | | 7:0 | | | | | | | |
| 1 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 |

Rd =

rot

cond = 1110

Imm8 = C8= :

Rn = R5

S = 1

cmd = 1010

op = 00: DP



Instruction 28, PC = 0x70

STRGT R6, [R4]: 0b1100 0101 1000 0100 0110 0000 0000 0000=0xC5846000

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 31:28 | | | | 27:26 | | 25 | 24 | 23 | 22 | 21 | 20 | 19:16 | | | | 15:12 | | | | 11:0 | | | | | | | | | | | |
| 1 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

op = 01: Mem

U = 1

offset = 0 = :

cond = 1100

Rn = R4

Rd = R6

L = 0

= 0

PW = 10, Offset

Instruction 29, PC = 0x74

CMP R5, #200: 0b 1110 0011 0101 0101 0000 0000 1100 1000= 0x E35500C8

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 31:28 | | | | 27:26 | | 25 | 24:21 | | | | 20 | 19:16 | | | | 15:12 | | | | 11:8 | | | | 7:0 | | | | | | | |
| 1 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 |

Rd =

rot

cond = 1110

Imm8 = C8= :

Rn = R5

S = 1

cmd = 1010

op = 00: DP



Instruction 30, PC = 0x78

LDRLE R6, SHOW\_EIGHT: 0b1101 0101 1001 1111 0110 0001 1011 1000=0x D59F61B8

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 31:28 | | | | 27:26 | | 25 | 24 | 23 | 22 | 21 | 20 | 19:16 | | | | 15:12 | | | | 11:0 | | | | | | | | | | | |
| 1 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 0 |

op = 01: Mem

U = 1

offset = 1B8 = :

cond = 1101

Rn = R15

Rd = R6

L = 1

= 0

PW = 10, Offset

Instruction 31, PC = 0x7C

CMP R5, #175: 0b 1110 0011 0101 0101 0000 0000 1010 1111= 0x E35500AF

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 31:28 | | | | 27:26 | | 25 | 24:21 | | | | 20 | 19:16 | | | | 15:12 | | | | 11:8 | | | | 7:0 | | | | | | | |
| 1 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 1 |

Rd =

rot

cond = 1110

Imm8 = AF= :

Rn = R5

S = 1

cmd = 1010

op = 00: DP

Instruction 32, PC = 0x80

STRGT R6, [R4]: 0b1100 0101 1000 0100 0110 0000 0000 0000=0xC5846000

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 31:28 | | | | 27:26 | | 25 | 24 | 23 | 22 | 21 | 20 | 19:16 | | | | 15:12 | | | | 11:0 | | | | | | | | | | | |
| 1 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

op = 01: Mem

U = 1

offset = 0 = :

cond = 1100

Rn = R4

Rd = R6

L = 0

= 0

PW = 10, Offset

Instruction 33, PC = 0x84

CMP R5, #175: 0b 1110 0011 0101 0101 0000 0000 1010 1111= 0x E35500AF

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 31:28 | | | | 27:26 | | 25 | 24:21 | | | | 20 | 19:16 | | | | 15:12 | | | | 11:8 | | | | 7:0 | | | | | | | |
| 1 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 1 |

Rd =

rot

cond = 1110

Imm8 = AF= :

Rn = R5

S = 1

cmd = 1010

op = 00: DP



Instruction 34, PC = 0x88

LDRLE R6, ZERO: 0b1101 0101 1001 1111 0110 0001 1000 1100=0x D59F618C

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 31:28 | | | | 27:26 | | 25 | 24 | 23 | 22 | 21 | 20 | 19:16 | | | | 15:12 | | | | 11:0 | | | | | | | | | | | |
| 1 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 |

op = 01: Mem

U = 1

offset = 18C = :

cond = 1101

Rn = R15

Rd = R6

L = 1

= 0

PW = 10, Offset

Instruction 35, PC = 0x8C

STRLE R6, [R4]: 0b1101 0101 1000 0100 0110 0000 0000 0000=0xD5846000

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 31:28 | | | | 27:26 | | 25 | 24 | 23 | 22 | 21 | 20 | 19:16 | | | | 15:12 | | | | 11:0 | | | | | | | | | | | |
| 1 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

op = 01: Mem

U = 1

offset = 0 = :

cond = 1101

Rn = R4

Rd = R6

L = 0

= 0

PW = 10, Offset

Instruction 36, PC = 0x90

LDR R6, [R3]: 0b1110 0101 1001 0011 0110 0000 0000 0000=0xE5936000

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 31:28 | | | | 27:26 | | 25 | 24 | 23 | 22 | 21 | 20 | 19:16 | | | | 15:12 | | | | 11:0 | | | | | | | | | | | |
| 1 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

op = 01: Mem

U = 1

offset = 0 = :

cond = 1110

Rn = R3

Rd = R6

L = 1

= 0

PW = 10, Offset

Instruction 37, PC = 0x94

STR R5, variable1: 0b1110 0101 1000 1111 0101 0111 0110 0100=0xE58F5764

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 31:28 | | | | 27:26 | | 25 | 24 | 23 | 22 | 21 | 20 | 19:16 | | | | 15:12 | | | | 11:0 | | | | | | | | | | | |
| 1 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 |

op = 01: Mem

U = 1

offset = 764 = :

cond = 1110

Rn = R15

Rd = R5

L = 0

= 0

PW = 10, Offset

Instruction 38, PC = 0x98

CMP R6, #4: 0b 1110 0011 0101 0110 0000 0000 0000 0100= 0x E3560004

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 31:28 | | | | 27:26 | | 25 | 24:21 | | | | 20 | 19:16 | | | | 15:12 | | | | 11:8 | | | | 7:0 | | | | | | | |
| 1 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |

Rd =

rot

cond = 1110

Imm8 = 4= :

Rn = R6

S = 1

cmd = 1010

op = 00: DP



Instruction 39, PC = 0x9C

LDREQ R7, variable1: 0b 0000 0101 1001 1111 0111 0111 0101 1100= 0x059F775C

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 31:28 | | | | 27:26 | | 25 | 24 | 23 | 22 | 21 | 20 | 19:16 | | | | 15:12 | | | | 11:0 | | | | | | | | | | | |
| 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 0 |

op = 01: Mem

U = 1

offset = 75C = :

cond = 0000

Rn = R15

Rd = R7

L = 1

= 0

PW = 10, Offset

Instruction 40, PC = 0xA0

CMP R6, #1: 0b 1110 0011 0101 0110 0000 0000 0000 0001= 0x E3560001

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 31:28 | | | | 27:26 | | 25 | 24:21 | | | | 20 | 19:16 | | | | 15:12 | | | | 11:8 | | | | 7:0 | | | | | | | |
| 1 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |

Rd =

rot

cond = 1110

Imm8 = 1= :

Rn = R6

S = 1

cmd = 1010

op = 00: DP



Instruction 41, PC = 0xA4

LDREQ R8, variable1: 0b 0000 0101 1001 1111 1000 0111 0101 0100= 0x059F8754

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 31:28 | | | | 27:26 | | 25 | 24 | 23 | 22 | 21 | 20 | 19:16 | | | | 15:12 | | | | 11:0 | | | | | | | | | | | |
| 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 |

op = 01: Mem

U = 1

offset = 754 = :

cond = 0000

Rn = R15

Rd = R8

L = 1

= 0

PW = 10, Offset

Instruction 42, PC = 0xA8

CMP R6, #5: 0b 1110 0011 0101 0110 0000 0000 0000 0101= 0x E3560005

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 31:28 | | | | 27:26 | | 25 | 24:21 | | | | 20 | 19:16 | | | | 15:12 | | | | 11:8 | | | | 7:0 | | | | | | | |
| 1 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |

Rd =

rot

cond = 1110

Imm8 = 5= :

Rn = R6

S = 1

cmd = 1010

op = 00: DP



Instruction 43, PC = 0xAC

LDREQ R7, variable1: 0b 0000 0101 1001 1111 0111 0111 0100 1100= 0x059F774C

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 31:28 | | | | 27:26 | | 25 | 24 | 23 | 22 | 21 | 20 | 19:16 | | | | 15:12 | | | | 11:0 | | | | | | | | | | | |
| 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 |

op = 01: Mem

U = 1

offset = 74C = :

cond = 0000

Rn = R15

Rd = R7

L = 1

= 0

PW = 10, Offset

Instruction 44, PC = 0xB0

LDREQ R8, variable1: 0b 0000 0101 1001 1111 1000 0111 0100 1000= 0x059F8748

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 31:28 | | | | 27:26 | | 25 | 24 | 23 | 22 | 21 | 20 | 19:16 | | | | 15:12 | | | | 11:0 | | | | | | | | | | | |
| 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 |

op = 01: Mem

U = 1

offset = 748 = :

cond = 0000

Rn = R15

Rd = R8

L = 1

= 0

PW = 10, Offset

Instruction 45, PC = 0xB4

SUBS R5, R5, #1: 0b 1110 0010 0101 0101 0101 0000 0000 0001= 0x E2555001

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 31:28 | | | | 27:26 | | 25 | 24:21 | | | | 20 | 19:16 | | | | 15:12 | | | | 11:8 | | | | 7:0 | | | | | | | |
| 1 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |

Rd = R5

rot

cond = 1110

Imm8 = 1 = :

Rn = R5

S = 1

cmd = 0010

op = 00: DP

Instruction 46, PC = 0xB8

BNE main\_loop: 0b0001 1010 1111 1111 1111 1111 1110 0101= 0x1AFFFFE5

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 31:28 | | | | 27:26 | | 25 | 24 | 23:0 | | | | | | | | | | | | | | | | | | | | | | | |
| 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 1 |

cond = 0001

Imm24 = 0xFFFFE5

op = 10

1L = 10

Instruction 47, PC = 0xBC

B delay\_loop: 0b1110 1010 1111 1111 1111 1111 1111 1111= 0xEAFFFFFF

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 31:28 | | | | 27:26 | | 25 | 24 | 23:0 | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

cond = 1110

Imm24 = 0xFFFFFF

op = 10

1L = 10

Instruction 48, PC = 0xC0

LDR R6, [R3]: 0b 1110 0101 1001 0011 0110 0000 0000 0000= 0xE5936000

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 31:28 | | | | 27:26 | | 25 | 24 | 23 | 22 | 21 | 20 | 19:16 | | | | 15:12 | | | | 11:0 | | | | | | | | | | | |
| 1 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

op = 01: Mem

U = 1

offset = 0 = :

cond = 1110

Rn = R3

Rd = R6

L = 1

= 0

PW = 10, Offset

Instruction 49, PC = 0xC4

STR R5, variable1: 0b1110 0101 1000 1111 0101 0111 0011 0100=0xE58F5734

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 31:28 | | | | 27:26 | | 25 | 24 | 23 | 22 | 21 | 20 | 19:16 | | | | 15:12 | | | | 11:0 | | | | | | | | | | | |
| 1 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 |

op = 01: Mem

U = 1

offset = 734 = :

cond = 1110

Rn = R15

Rd = R5

L = 0

= 0

PW = 10, Offset

Instruction 50, PC = 0xC8

CMP R6, #4: 0b 1110 0011 0101 0110 0000 0000 0000 0100= 0x E3560004

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 31:28 | | | | 27:26 | | 25 | 24:21 | | | | 20 | 19:16 | | | | 15:12 | | | | 11:8 | | | | 7:0 | | | | | | | |
| 1 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |

Rd =

rot

cond = 1110

Imm8 = 4= :

Rn = R6

S = 1

cmd = 1010

op = 00: DP



Instruction 51, PC = 0xCC

LDREQ R7, variable1: 0b 0000 0101 1001 1111 0111 0111 0010 1100= 0x059F772C

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 31:28 | | | | 27:26 | | 25 | 24 | 23 | 22 | 21 | 20 | 19:16 | | | | 15:12 | | | | 11:0 | | | | | | | | | | | |
| 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 |

op = 01: Mem

U = 1

offset = 72C = :

cond = 0000

Rn = R15

Rd = R7

L = 1

= 0

PW = 10, Offset

Instruction 52, PC = 0xD0

CMP R6, #1: 0b 1110 0011 0101 0110 0000 0000 0000 0001= 0x E3560001

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 31:28 | | | | 27:26 | | 25 | 24:21 | | | | 20 | 19:16 | | | | 15:12 | | | | 11:8 | | | | 7:0 | | | | | | | |
| 1 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |

Rd =

rot

cond = 1110

Imm8 = 1= :

Rn = R6

S = 1

cmd = 1010

op = 00: DP

Instruction 53, PC = 0xD4

LDREQ R8, variable1: 0b 0000 0101 1001 1111 1000 0111 0010 0100= 0x059F8724

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 31:28 | | | | 27:26 | | 25 | 24 | 23 | 22 | 21 | 20 | 19:16 | | | | 15:12 | | | | 11:0 | | | | | | | | | | | |
| 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 |

op = 01: Mem

U = 1

offset = 724 = :

cond = 0000

Rn = R15

Rd = R8

L = 1

= 0

PW = 10, Offset

Instruction 54, PC = 0xD8

CMP R6, #5: 0b 1110 0011 0101 0110 0000 0000 0000 0101= 0x E3560005

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 31:28 | | | | 27:26 | | 25 | 24:21 | | | | 20 | 19:16 | | | | 15:12 | | | | 11:8 | | | | 7:0 | | | | | | | |
| 1 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |

Rd =

rot

cond = 1110

Imm8 = 5= :

Rn = R6

S = 1

cmd = 1010

op = 00: DP



Instruction 55, PC = 0xDC

LDREQ R7, variable1: 0b 0000 0101 1001 1111 0111 0111 0001 1100= 0x059F771C

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 31:28 | | | | 27:26 | | 25 | 24 | 23 | 22 | 21 | 20 | 19:16 | | | | 15:12 | | | | 11:0 | | | | | | | | | | | |
| 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 |

op = 01: Mem

U = 1

offset = 71C = :

cond = 0000

Rn = R15

Rd = R7

L = 1

= 0

PW = 10, Offset

Instruction 56, PC = 0xE0

LDREQ R8, variable1: 0b 0000 0101 1001 1111 1000 0111 0001 1000= 0x059F8718

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 31:28 | | | | 27:26 | | 25 | 24 | 23 | 22 | 21 | 20 | 19:16 | | | | 15:12 | | | | 11:0 | | | | | | | | | | | |
| 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 |

op = 01: Mem

U = 1

offset = 718 = :

cond = 0000

Rn = R15

Rd = R8

L = 1

= 0

PW = 10, Offset

Instruction 57, PC = 0xE4

ADD R5, R5, #1: 0b 1110 0010 1000 0101 0101 0000 0000 0001= 0xE2855001

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 31:28 | | | | 27:26 | | 25 | 24:21 | | | | 20 | 19:16 | | | | 15:12 | | | | 11:8 | | | | 7:0 | | | | | | | |
| 1 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |

Rd = R5

rot

cond = 1110

Imm8 = 1 = :

Rn = R5

S = 0

cmd = 0100

op = 00: DP

Instruction 58, PC = 0xE8

CMP R5, #100: 0b 1110 0011 0101 0101 0000 0000 0110 0100= 0x E3550064

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 31:28 | | | | 27:26 | | 25 | 24:21 | | | | 20 | 19:16 | | | | 15:12 | | | | 11:8 | | | | 7:0 | | | | | | | |
| 1 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 |

Rd =

rot

cond = 1110

Imm8 = 64= :

Rn = R5

S = 1

cmd = 1010

op = 00: DP

Instruction 59, PC = 0xEC

BNE delay\_loop: 0b0001 1010 1111 1111 1111 1111 1111 0011= 0x1AFFFFF3

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 31:28 | | | | 27:26 | | 25 | 24 | 23:0 | | | | | | | | | | | | | | | | | | | | | | | |
| 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 |

cond = 0001

Imm24 = 0xFFFFF3

op = 10

1L = 10

Instruction 60, PC = 0xF0

B winner: 0b1110 1010 1111 1111 1111 1111 1111 1111= 0xEAFFFFFF

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 31:28 | | | | 27:26 | | 25 | 24 | 23:0 | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

cond = 1110

Imm24 = 0xFFFFFF

op = 10

1L = 10

Instruction 61, PC = 0xF4

CMP R7, R8: 0b 1110 0001 0101 0111 0000 0000 0000 1000= 0x E1570008

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 31:28 | | | | 27:26 | | 25 | 24:21 | | | | 20 | 19:16 | | | | 15:12 | | | | 11:5 | | | | | | | 4 | 3:0 | | | |
| 1 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |

Rm = R8 = :

Rn = R7

shamt5 = 0

cond = 1110

M = 0

S = 1

I = 0

Rd =

cmd = 1010

op = 00: DP

sh = 00

Instruction 62, PC = 0xF8

LDRGT R6, B\_WIN: 0b 1100 0101 1001 1111 0110 0001 0100 0000= 0xC59F6140

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 31:28 | | | | 27:26 | | 25 | 24 | 23 | 22 | 21 | 20 | 19:16 | | | | 15:12 | | | | 11:0 | | | | | | | | | | | |
| 1 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |

op = 01: Mem

U = 1

offset = 140 = :

cond = 1100

Rn = R15

Rd = R6

L = 1

= 0

PW = 10, Offset



Instruction 63, PC = 0xFC

STRGT R6, [R4]: 0b1100 0101 1000 0100 0110 0000 0000 0000=0xC5846000

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 31:28 | | | | 27:26 | | 25 | 24 | 23 | 22 | 21 | 20 | 19:16 | | | | 15:12 | | | | 11:0 | | | | | | | | | | | |
| 1 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

op = 01: Mem

U = 1

offset = 0 = :

cond = 1100

Rn = R4

Rd = R6

L = 0

= 0

PW = 10, Offset

Instruction 64, PC = 0x100

LDRLT R6, A\_WIN: 0b 1011 0101 1001 1111 0110 0001 0011 0100= 0xB59F6134

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 31:28 | | | | 27:26 | | 25 | 24 | 23 | 22 | 21 | 20 | 19:16 | | | | 15:12 | | | | 11:0 | | | | | | | | | | | |
| 1 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 |

op = 01: Mem

U = 1

offset = 134 = :

cond = 1011

Rn = R15

Rd = R6

L = 1

= 0

PW = 10, Offset



Instruction 65, PC = 0x104

STRLT R6, [R4]: 0b1011 0101 1000 0100 0110 0000 0000 0000=0xB5846000

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 31:28 | | | | 27:26 | | 25 | 24 | 23 | 22 | 21 | 20 | 19:16 | | | | 15:12 | | | | 11:0 | | | | | | | | | | | |
| 1 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

op = 01: Mem

U = 1

offset = 0 = :

cond = 1011

Rn = R4

Rd = R6

L = 0

= 0

PW = 10, Offset



Instruction 66, PC = 0x108

LDREQ R6, BOTH\_WIN: 0b 0000 0101 1001 1111 0110 0001 0011 0100= 0x059F6134

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 31:28 | | | | 27:26 | | 25 | 24 | 23 | 22 | 21 | 20 | 19:16 | | | | 15:12 | | | | 11:0 | | | | | | | | | | | |
| 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 |

op = 01: Mem

U = 1

offset = 134 = :

cond = 0000

Rn = R15

Rd = R6

L = 1

= 0

PW = 10, Offset



Instruction 67, PC = 0x10C

STREQ R6, [R4]: 0b 0000 0101 1000 0100 0110 0000 0000 0000= 0x05846000

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 31:28 | | | | 27:26 | | 25 | 24 | 23 | 22 | 21 | 20 | 19:16 | | | | 15:12 | | | | 11:0 | | | | | | | | | | | |
| 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

op = 01: Mem

U = 1

offset = 0 = :

cond = 0000

Rn = R4

Rd = R6

L = 0

= 0

PW = 10, Offset

Instruction 68, PC = 0x110

B switch: 0b1110 1010 1111 1111 1111 1111 1111 1111= 0xEAFFFFFF

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 31:28 | | | | 27:26 | | 25 | 24 | 23:0 | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

cond = 1110

Imm24 = 0xFFFFFF

op = 10

1L = 10

Instruction 69, PC = 0x114

LDR R6, [R2]: 0b1110 0101 1001 0010 0110 0000 0000 0000=0xE5926000

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 31:28 | | | | 27:26 | | 25 | 24 | 23 | 22 | 21 | 20 | 19:16 | | | | 15:12 | | | | 11:0 | | | | | | | | | | | |
| 1 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

op = 01: Mem

U = 1

offset = 0 = :

cond = 1110

Rn = R2

Rd = R6

L = 1

= 0

PW = 10, Offset

Instruction 70, PC = 0x118

STR R6, [R1]: 0b1110 0101 1000 0001 0110 0000 0000 0000=0xE5816000

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 31:28 | | | | 27:26 | | 25 | 24 | 23 | 22 | 21 | 20 | 19:16 | | | | 15:12 | | | | 11:0 | | | | | | | | | | | |
| 1 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

op = 01: Mem

U = 1

offset = 0 = :

cond = 1110

Rn = R1

Rd = R6

L = 0

= 0

PW = 10, Offset

Instruction 71, PC = 0x11C

B switch: 0b1110 1010 1111 1111 1111 1111 1111 1100= 0xEAFFFFFC

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 31:28 | | | | 27:26 | | 25 | 24 | 23:0 | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 |

cond = 1110

Imm24 = 0xFFFFFC

op = 10

1L = 10

Instruction 72, PC = 0x120

B halt: 0b1110 1010 1111 1111 1111 1111 1111 1110= 0xEAFFFFFE

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 31:28 | | | | 27:26 | | 25 | 24 | 23:0 | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 |

cond = 1110

Imm24 = 0xFFFFFE

op = 10

1L = 10