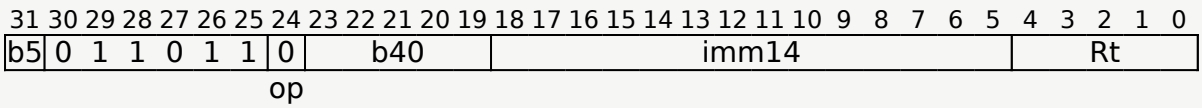
TBZ

Test bit and Branch if Zero compares the value of a test bit with zero, and conditionally branches to a label at a PC-relative offset if the comparison is equal. It provides a hint that this is not a subroutine call or return. This instruction does not affect condition flags.



TBZ <R><t>, #<imm>, <label>

```
integer t = UInt(Rt);

constant integer datasize = 32 << UInt(b5);
integer bit_pos = UInt(b5:b40);
bits(64) offset = SignExtend(imm14:'00', 64);
```

Assembler Symbols

<R>
Is a width specifier, encoded in “b5”:

b5	<R>
0	W
1	X

In assembler source code an 'X' specifier is always permitted, but a 'W' specifier is only permitted when the bit number is less than 32.

<t>
Is the number [0-30] of the general-purpose register to be tested or the name ZR (31), encoded in the "Rt" field.

<imm>
Is the bit number to be tested, in the range 0 to 63, encoded in "b5:b40".

<label>
Is the program label to be conditionally branched to. Its offset from the address of this instruction, in the range +/-32KB, is encoded as "imm14" times 4.

Operation

```
bits(datasize) operand = X[t, datasize];
if operand<bit_pos> == op then
    BranchTo(PC64 + offset, BranchType_DIR, TRUE);
else
    BranchNotTaken(BranchType_DIR, TRUE);
```

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