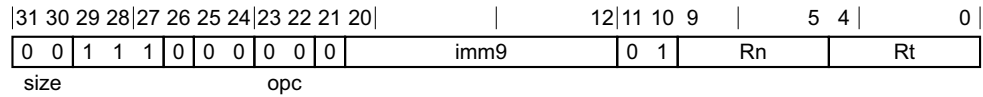


C6.2.244 STRB (immediate)

Store Register Byte (immediate) stores the least significant byte of a 32-bit register to memory. The address that is used for the store is calculated from a base register and an immediate offset. For information about memory accesses, see [Load/Store addressing modes](#) on page C1-149.

Post-index



Post-index variant

STRB <Wt>, [<Xn|SP>], #<imm>

Decode for this encoding

```
boolean wback = TRUE;
boolean postindex = TRUE;
bits(64) offset = SignExtend(imm9, 64);
```

Pre-index



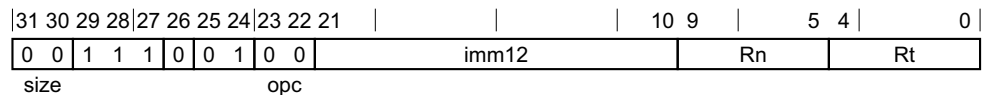
Pre-index variant

STRB <Wt>, [<Xn|SP>, #<imm>]!

Decode for this encoding

```
boolean wback = TRUE;
boolean postindex = FALSE;
bits(64) offset = SignExtend(imm9, 64);
```

Unsigned offset



Unsigned offset variant

STRB <Wt>, [<Xn|SP>{, #<pimm>}]

Decode for this encoding

```
boolean wback = FALSE;
boolean postindex = FALSE;
bits(64) offset = LSL(ZeroExtend(imm12, 64), 0);
```

Notes for all encodings

For information about the CONSTRAINED UNPREDICTABLE behavior of this instruction, see [Appendix K1 Architectural Constraints on UNPREDICTABLE behaviors](#), and particularly *STRB (immediate)* on page K1-6425.

Assembler symbols

<Wt>	Is the 32-bit name of the general-purpose register to be transferred, encoded in the "Rt" field.
<Xn SP>	Is the 64-bit name of the general-purpose base register or stack pointer, encoded in the "Rn" field.
<simm>	Is the signed immediate byte offset, in the range -256 to 255, encoded in the "imm9" field.
<piimm>	Is the optional positive immediate byte offset, in the range 0 to 4095, defaulting to 0 and encoded in the "imm12" field.

Shared decode for all encodings

```
integer n = UInt(Rn);
integer t = UInt(Rt);
```

Operation for all encodings

```
bits(64) address;
bits(8) data;
boolean rt_unknown = FALSE;

if wback && n == t && n != 31 then
  c = ConstrainUnpredictable();
  assert c IN {Constraint_NONE, Constraint_UNKNOWN, Constraint_UNDEF, Constraint_NOP};
  case c of
    when Constraint_NONE   rt_unknown = FALSE; // value stored is original value
    when Constraint_UNKNOWN rt_unknown = TRUE;  // value stored is UNKNOWN
    when Constraint_UNDEF   UnallocatedEncoding();
    when Constraint_NOP     EndOfInstruction();

if n == 31 then
  CheckSPAlignment();
  address = SP[];
else
  address = X[n];

if !postindex then
  address = address + offset;

if rt_unknown then
  data = bits(8) UNKNOWN;
else
  data = X[t];
Mem[address, 1, AccType_NORMAL] = data;

if wback then
  if postindex then
    address = address + offset;
  if n == 31 then
    SP[] = address;
  else
    X[n] = address;
```