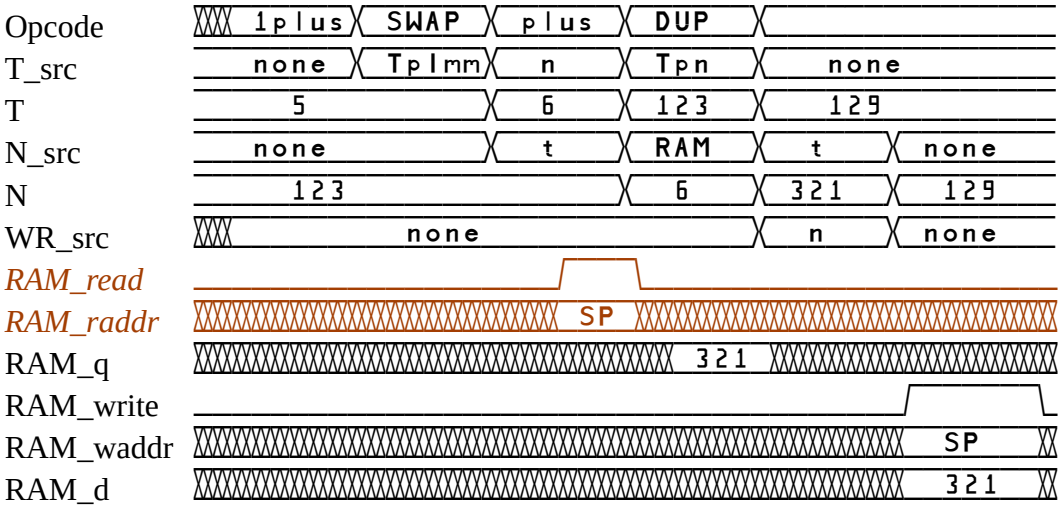
M32 waveforms

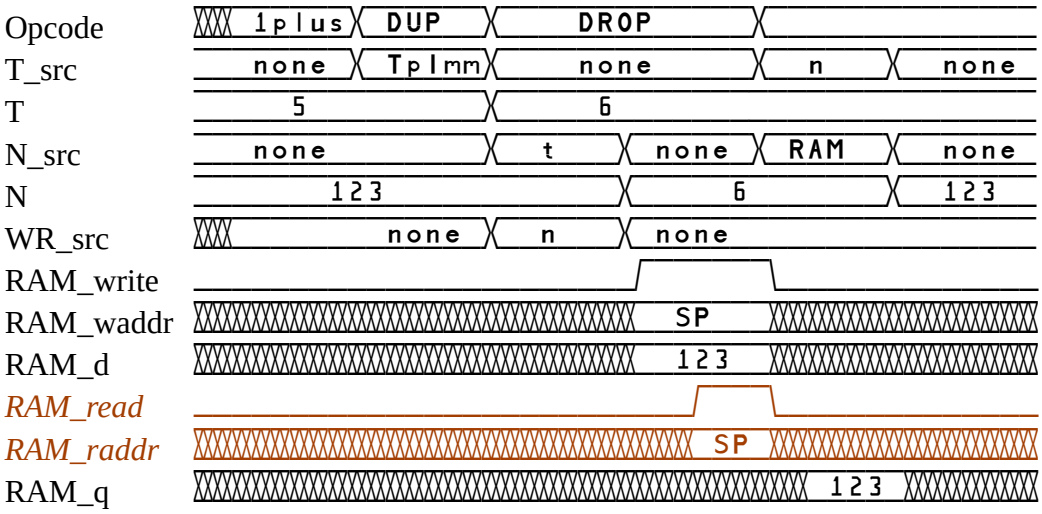
Block RAM

Block RAM uses synchronous read, whose signals are asynchronously decoded from **opcode**. Synchronous opcode decoding sets up the sources for various registers. For example, **new_T** indicates that **T** is to be loaded from 1 of 16 sources.

DROP followed by DUP:

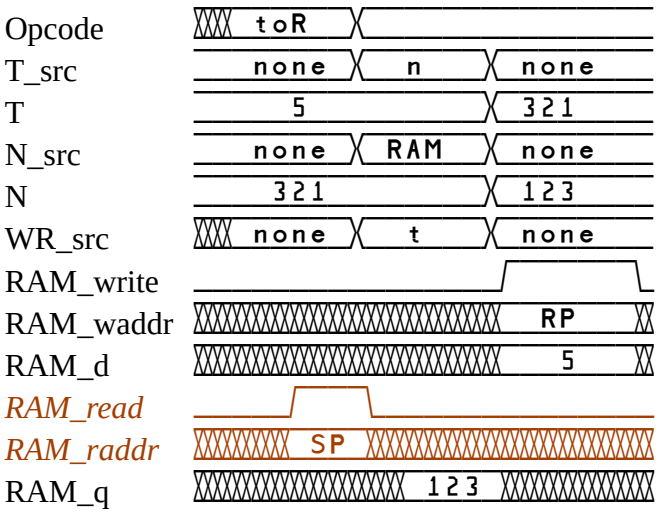


DUP followed by DROP: To prevent DROP's read from occurring before DUP's write, "WR_src" must be "none" to allow decoding when is a read is expected. Simultaneous read/write to same address can be worked around.



If single-port RAM is used, decoding must also be held off while **RAM_write** is high.

Some opcodes request read and write operations. For example, >R.



Fetch needs T before it can start a read. @+ (a – a+4 n).
The fetch state checks T and fetches from ROM space (instead) if necessary.