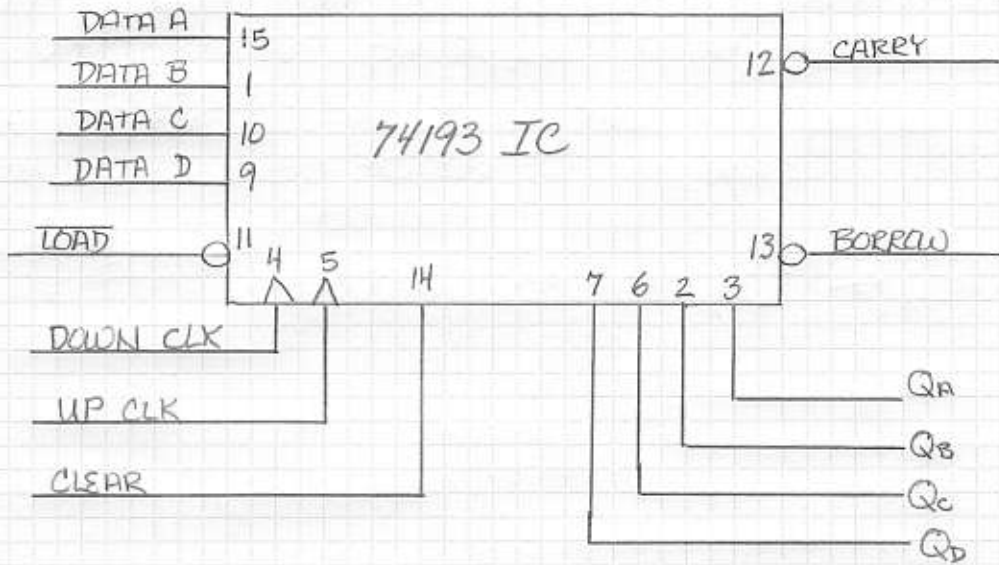


74193

The 7493 is a synchronous UP-DOWN programmable 4-bit counter. This device features carry and borrow outputs used to cascade with other counters; used typically with BCD counters to increment and decrement the count value of the next most significant digit.



Data inputs DATA A \rightarrow Data D are used in concert with \overline{LOAD} to pre-load, or 'program' the counter with any four bit value. This can be used to incorporate a 'reset-to' condition within the counter, or can pre-load a value derived from another device or circuit.

Pulses applied to DOWN CLK cause the counter to decrement its value. When the counter decrements past zero, the borrow output becomes active in order to decrement the next significant digit, i.e. 74, 73, 72, 71, 70, 69 etc.

Pulses applied to UP CLK cause the counter to increment its value. When the counter increments through zero, the carry output is activated in order to increment the next significant digit, i.e. 77, 78, 79, 80 etc.

Clear is used, with decoding, to reset all four flip flops (bits) to zero when reaching 'reset-at'.

