Why doesn’t the Seven Segment Controller just display all four digits at the same time?

This is so we always have control of what if being displayed on each digit and that the correct value is always being displayed with no long delays. For our brains, the fast speed of lighting up the digits makes it appear that all four digits are turned on at the same time.

How long (in microseconds) is each digit illuminated for?

327.68 microseconds

Given that the system clock is 100MHz, what value does your counter need to count to in order to roll over every 0.01s?

1 million cycles to roll over every 0.01s because the 100mhz clock counts 100mil cycles per second