Differences from a 6522.

Timers may operate in either 16-bit or 64-bit mode. This is controlled by ACR register bits 8 and 9. The default mode is 16-bit mode compatible with a 6522.

In one-shot mode the timers do not disable interrupts after the first pulse, since the timers are 64-bit and it would be quite some time before they underflow again. In other words, the system will likely have been reset before the timers underflow a second or more times.

If the timers are in 16-bit mode (the default mode) then the timer high registers are associated with timer bits 8 to 15. Otherwise if the timers are in 64-bit mode the timer high registers are associated with timer bits 32 to 63. The timer low registers are always associated with timer bits 0 to 31.

Loading the timer high register when timers are configured for 16-bit mode zeros out the upper 48-bits of the timers, thus limiting the count to a 16-bit count.