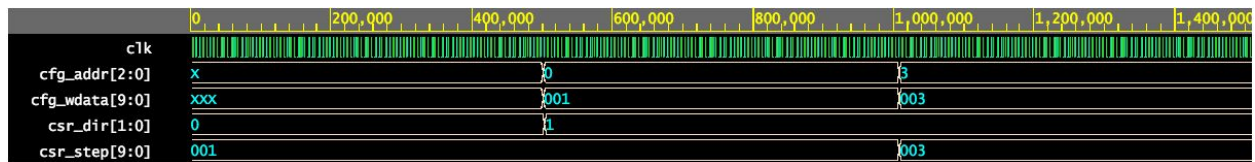


The transactions sent for address h'0 with data of 'h1 and address h'3 with data of 'h3 can be seen to take effect in the waveform below. Registers csr\_dir and csr\_step are loaded with the values h'1 and h'3 respectively.



Print statements in the console show the counter change from counting up by to counting down by around the 500ns mark, which is the time the first transaction is sent to csr\_dir.

```
(453 ns)Count value = 95
(458 ns)Count value = 96
(463 ns)Count value = 97
(468 ns)Count value = 98
(473 ns)Count value = 99
(478 ns)Count value = 100
Max Count reached: Rolling over
(483 ns)Count value = 10
(488 ns)Count value = 11
(493 ns)Count value = 12
(498 ns)Count value = 13
Creating a new configuration packet
Printing the pkt contents
---Pkt Id --- 1
---Addr --- 0
---Value --- 1
PCOUNTER_CONFIG: Mode = down counter
(503 ns)Count value = 14
PCOUNTER_CONFIG: Mode = down counter
(508 ns)Count value = 15
(513 ns)Count value = 14
(518 ns)Count value = 13
(523 ns)Count value = 12
(528 ns)Count value = 11
(533 ns)Count value = 10
Min Count reached: Rolling over
(538 ns)Count value = 100
(543 ns)Count value = 99
(548 ns)Count value = 98
(553 ns)Count value = 97
(558 ns)Count value = 96
(563 ns)Count value = 95
(568 ns)Count value = 94
(573 ns)Count value = 93
```

Then at around 1us, the csr\_step register is updated to h'3 and the counter begins counting down by 3. This is around the time the second transaction is sent.

---

```
(943 ns)Count value = 19
(948 ns)Count value = 18
(953 ns)Count value = 17
(958 ns)Count value = 16
(963 ns)Count value = 15
(968 ns)Count value = 14
(973 ns)Count value = 13
(978 ns)Count value = 12
(983 ns)Count value = 11
(988 ns)Count value = 10
Min Count reached: Rolling over
(993 ns)Count value = 100
(998 ns)Count value = 99
(1003 ns)Count value = 98
Creating a new configuration packet
Printing the pkt contents
---Pkt Id --- 2
---Addr --- 3
---Value --- 3
PCOUNTER_CONFIG: Setting the step count to 3
(1008 ns)Count value = 97
PCOUNTER_CONFIG: Setting the step count to 3
(1013 ns)Count value = 96
(1018 ns)Count value = 93
(1023 ns)Count value = 90
(1028 ns)Count value = 87
(1033 ns)Count value = 84
(1038 ns)Count value = 81
(1043 ns)Count value = 78
(1048 ns)Count value = 75
(1053 ns)Count value = 72
(1058 ns)Count value = 69
(1063 ns)Count value = 66
(1068 ns)Count value = 63
(1073 ns)Count value = 60
```

---