

## 2.6 Blinking an LED

With the Oszi you can measure the signal. See at Figure1: 2.6\_BlinkLed\_Delay0.

A max. frequenz of 12.5 MHz. It is not stabil. In this exercise I set the on cycle delay to '1' and the off cycle delay to '0'.

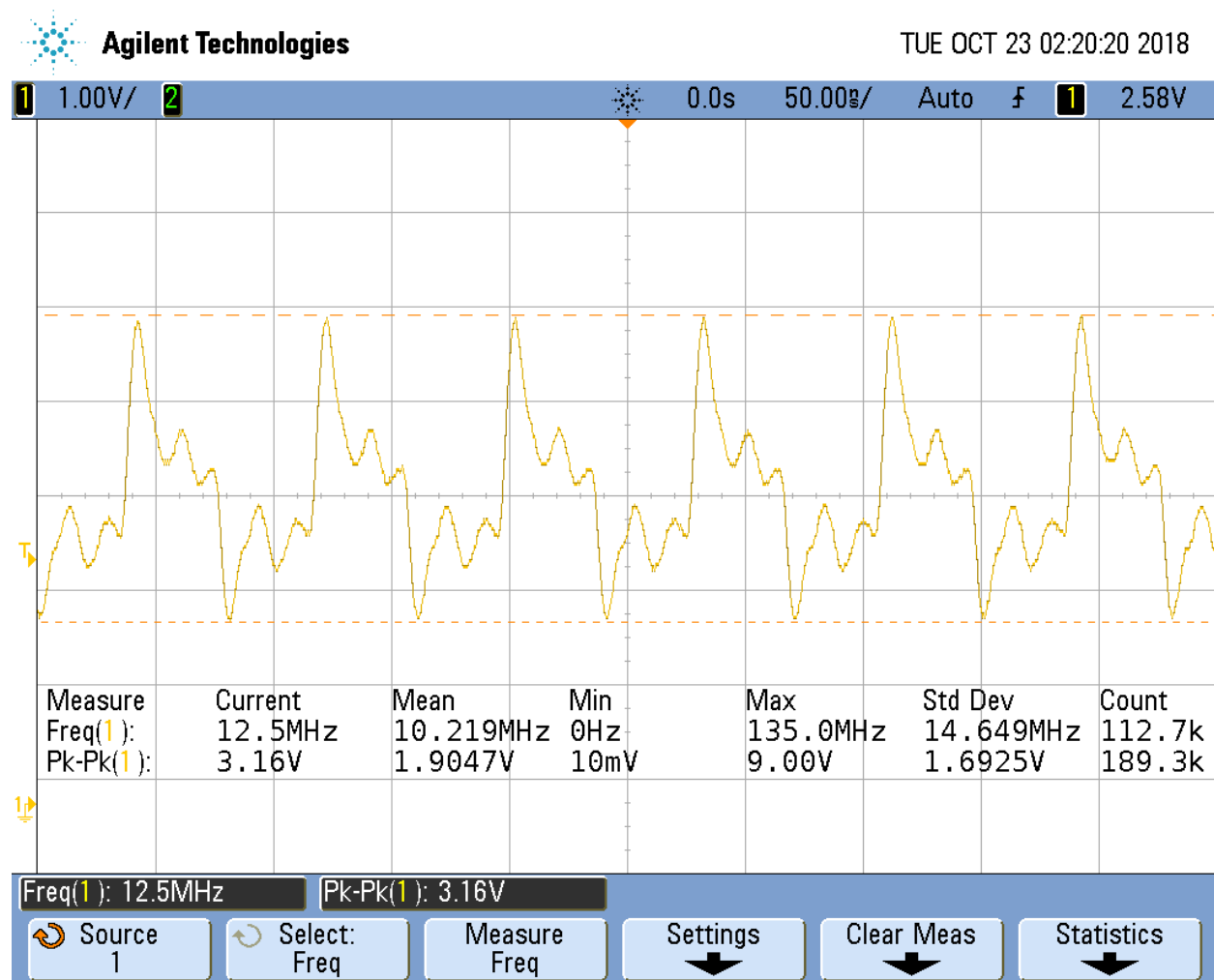


Figure 1: 2.6\_BlinkLed\_Delay on 1 off 0

A max. frequenz of 50 MHz. It is stabel. In this exercise I set the on cycle delay to '0' and the off cycle delay to '0'

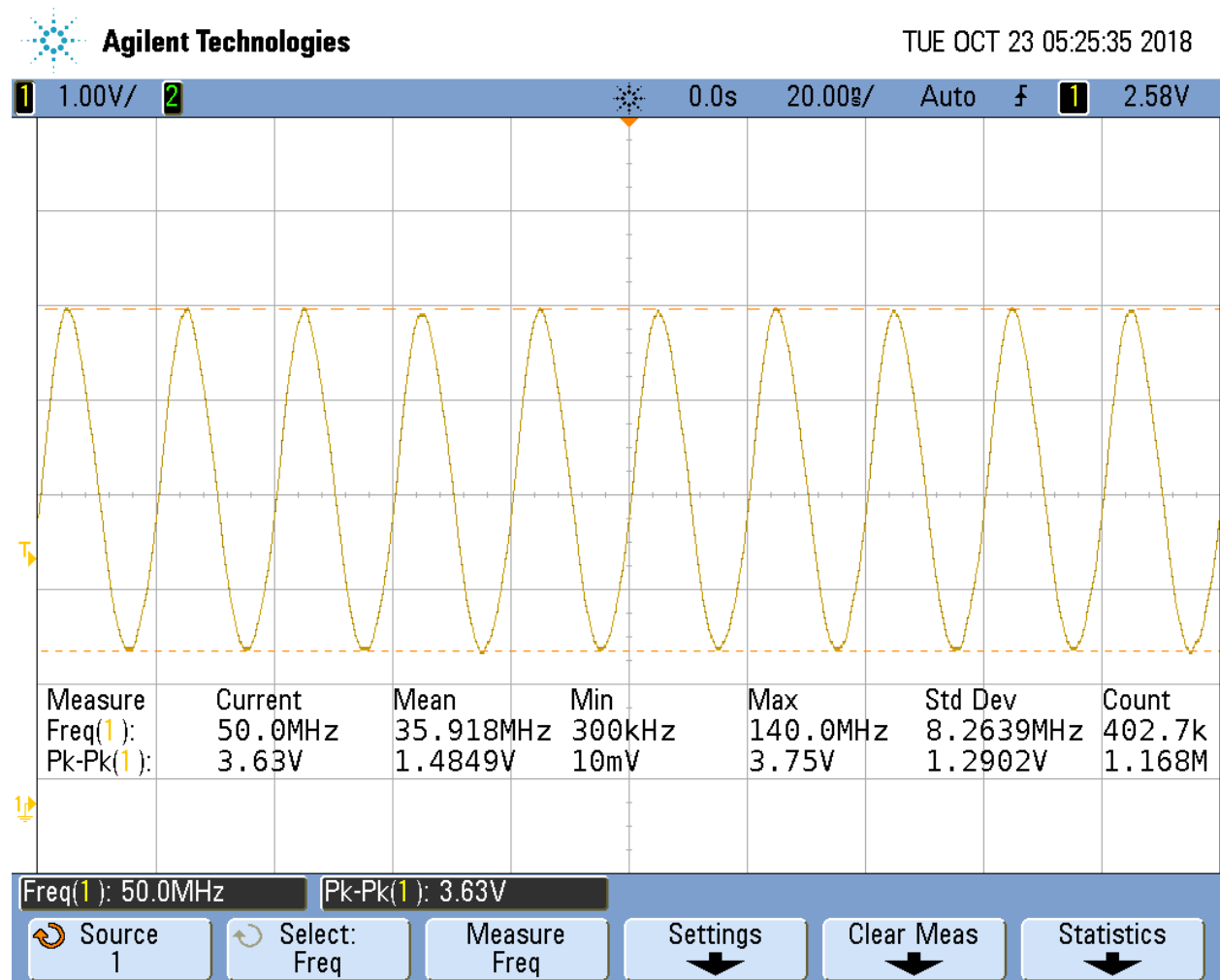


Figure 2: 2.6\_BlinkLed\_Delay on 0 off 0

### 5.3 PWM Generator

You can see the Measurement with a delay of 100. You can see some overshoots, it is not stable and has a jitter. In the picture 5.3\_PWMGenerator\_delay10000000 you can see the result for a delay of 10000000. You can see it is more stable and has no jitter.

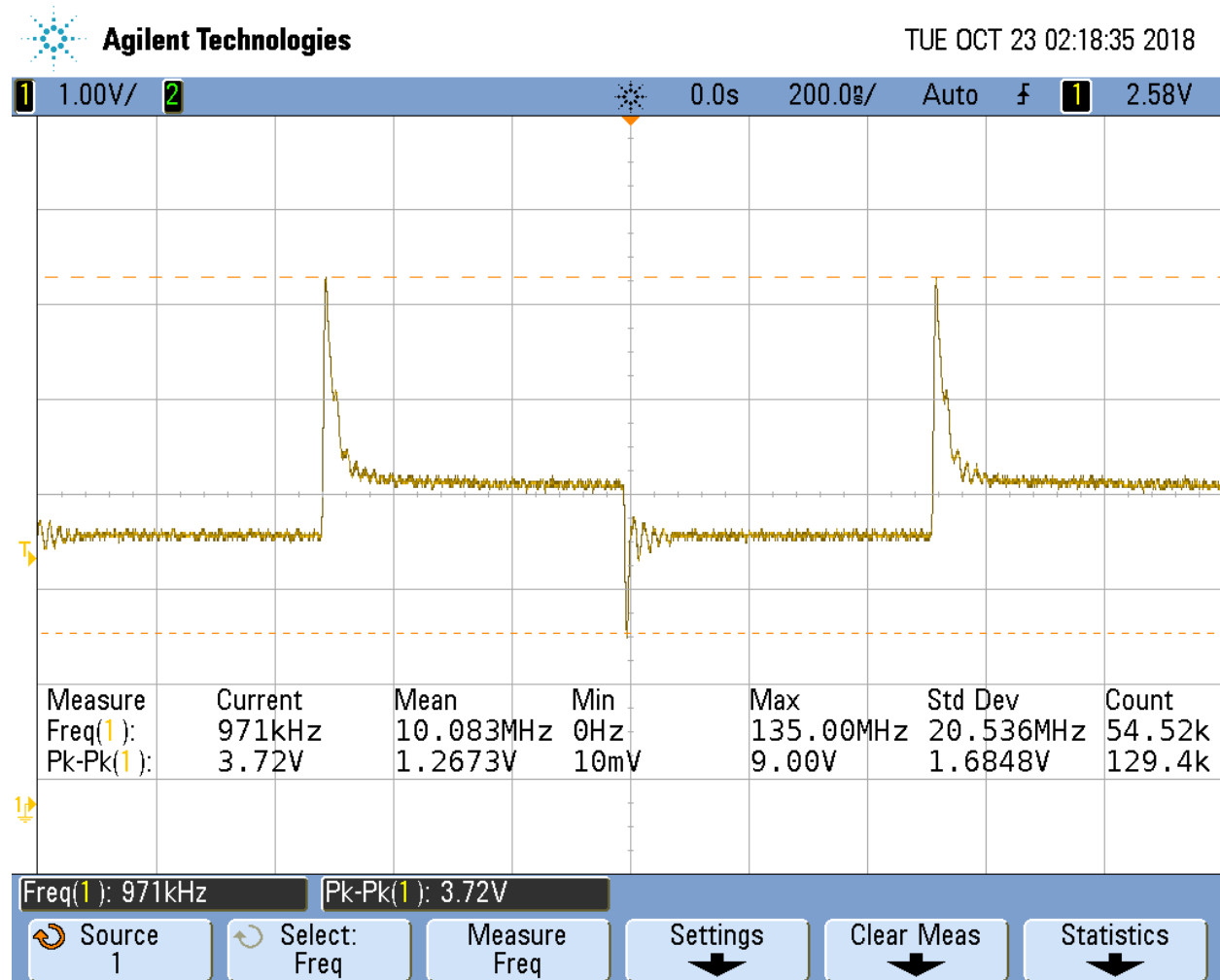


Figure 3: 5.3\_PWMGenerator\_delay\_100

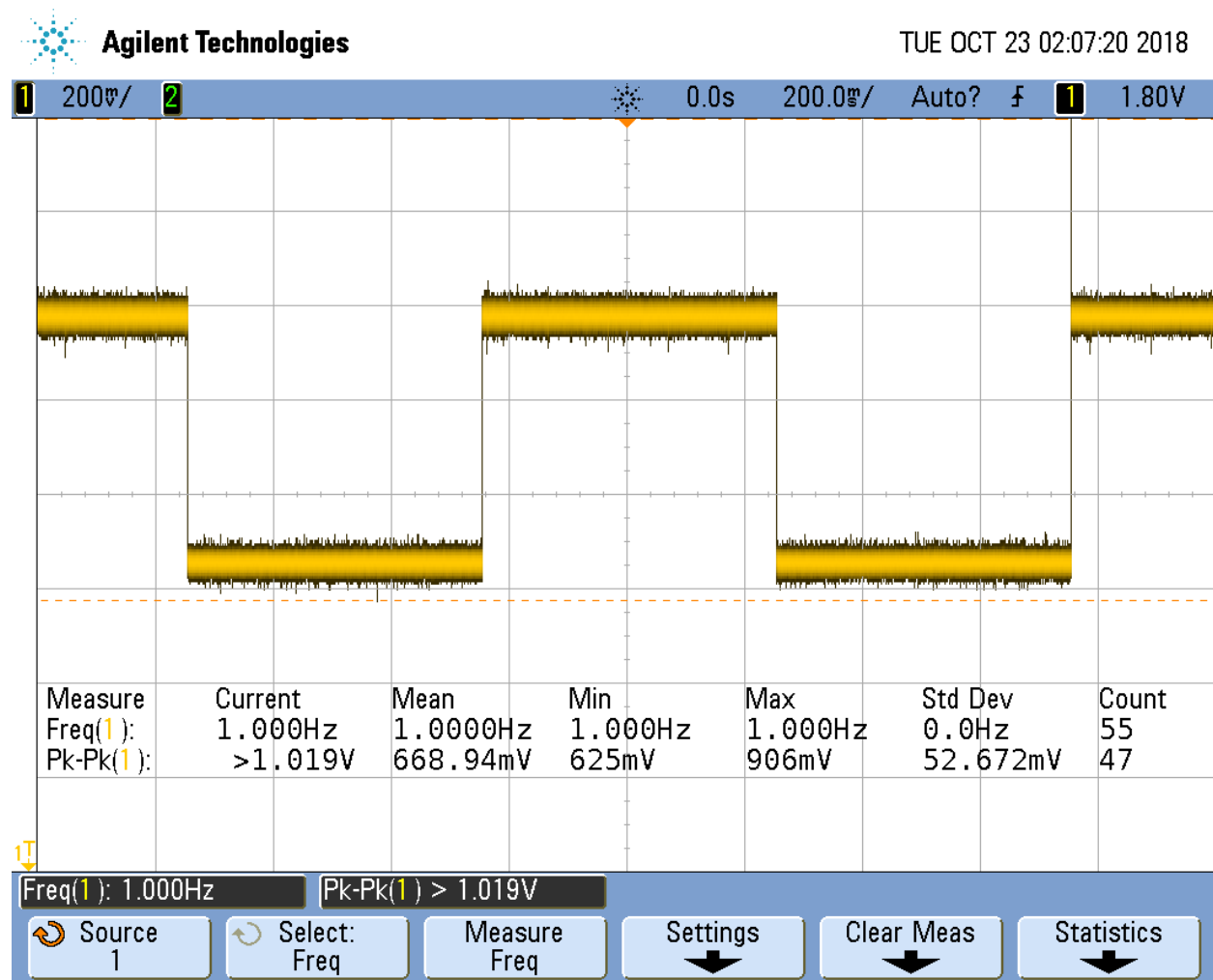


Figure 4: 5.3\_PWMGenerator\_delay10000000

## 5.4 Controlling the PWM Frequency

It was not possible to measure all four Pins with one oscilloscope .

I added two pictures (5.4\_ControllingPWM\_P8\_45andP8\_46) with the P8\_45 and P8\_46. The highest frequenz is 28.5MHz. Yes the signals have a Jitter.

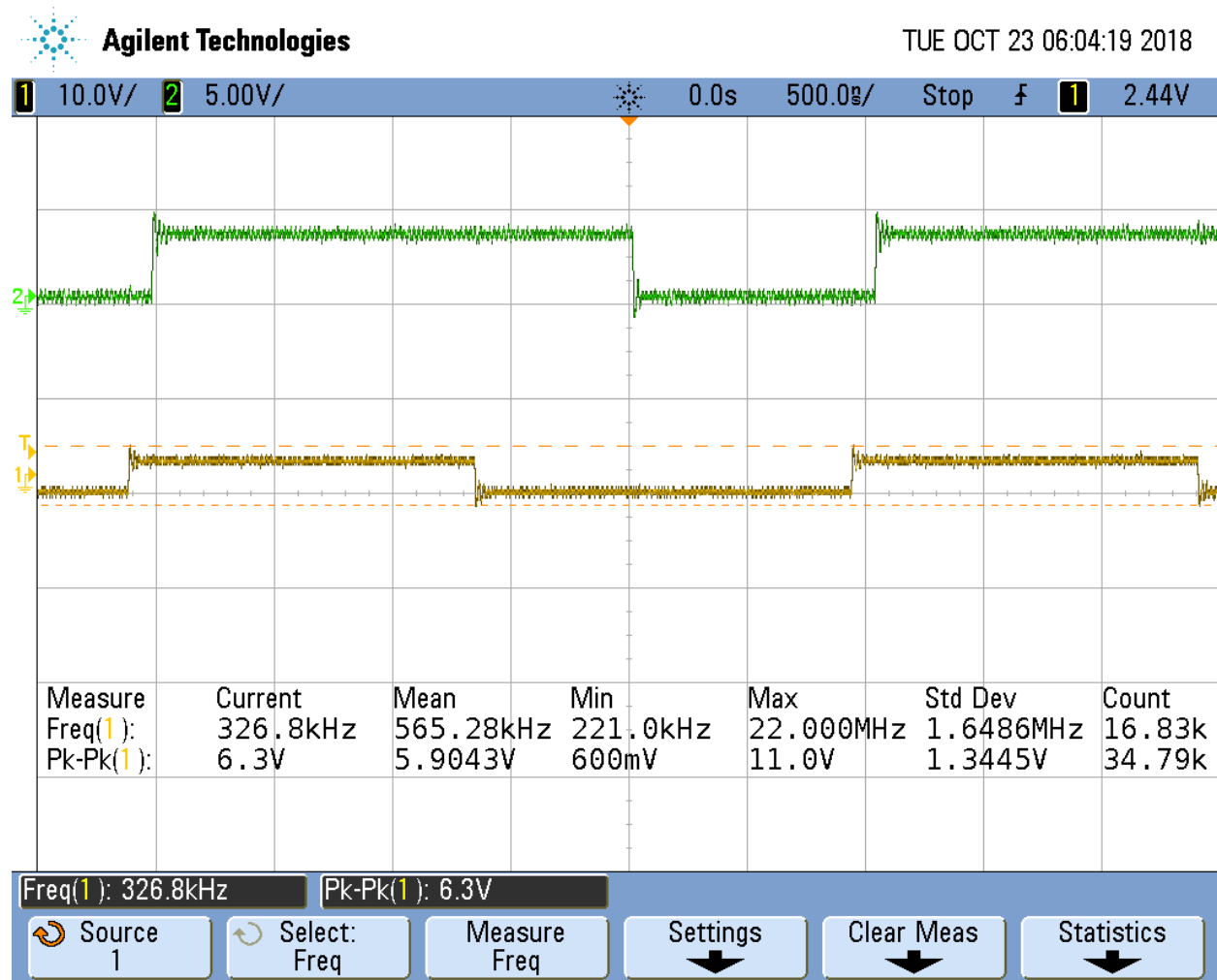


Figure 5: 5.4\_ControllingPWM\_P8\_43andP8\_44

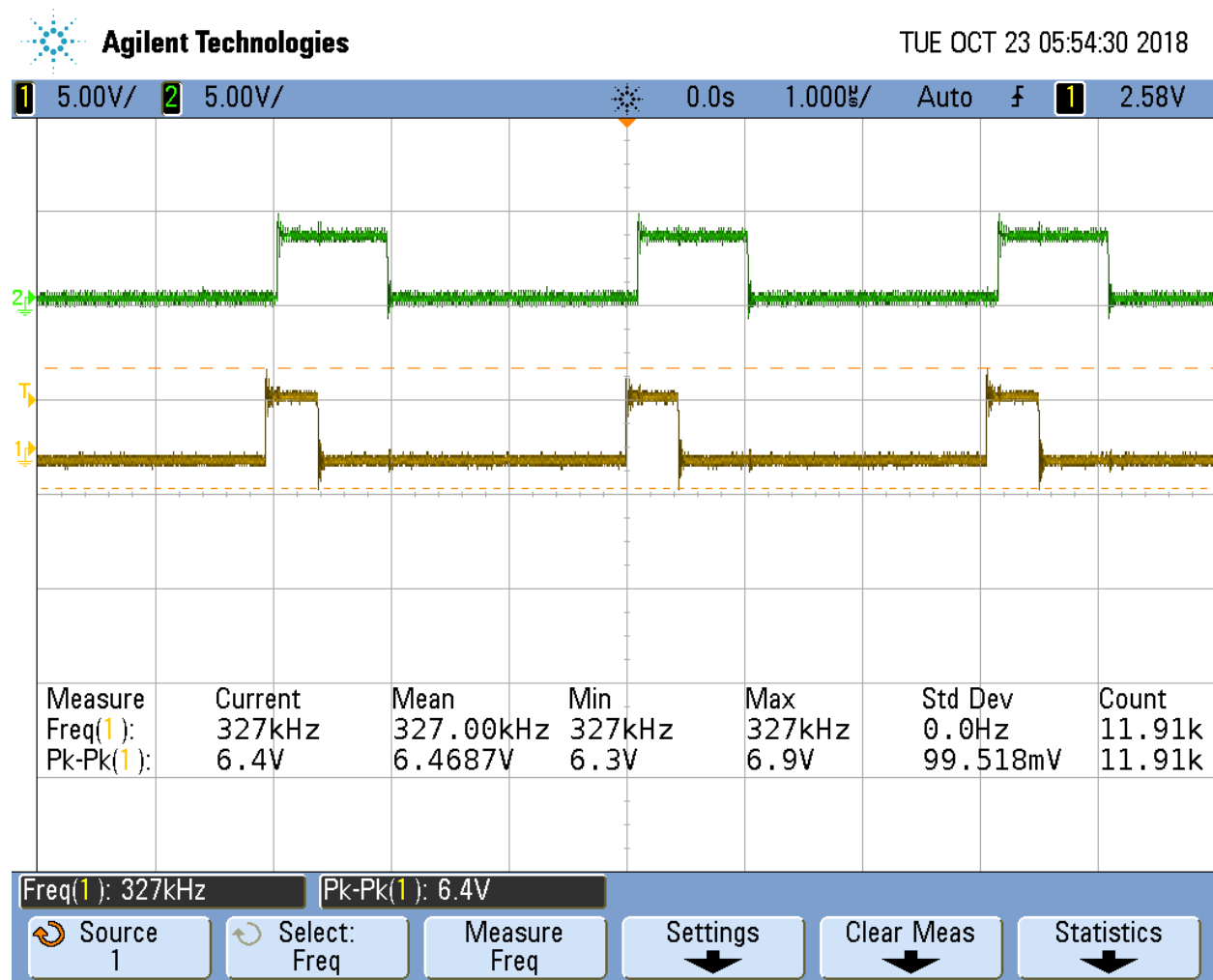


Figure 6: 5.4\_ControllingPWM\_P8\_45andP8\_46

## 5.5 Loop Unrolling for Better Performance

You can see the resolution in the Picture 5.5\_LoopPWM\_P8\_43andP8\_44 and 5.5\_LoopPWM\_P8\_45andP8\_46. You can see a speed up of the frequenz.

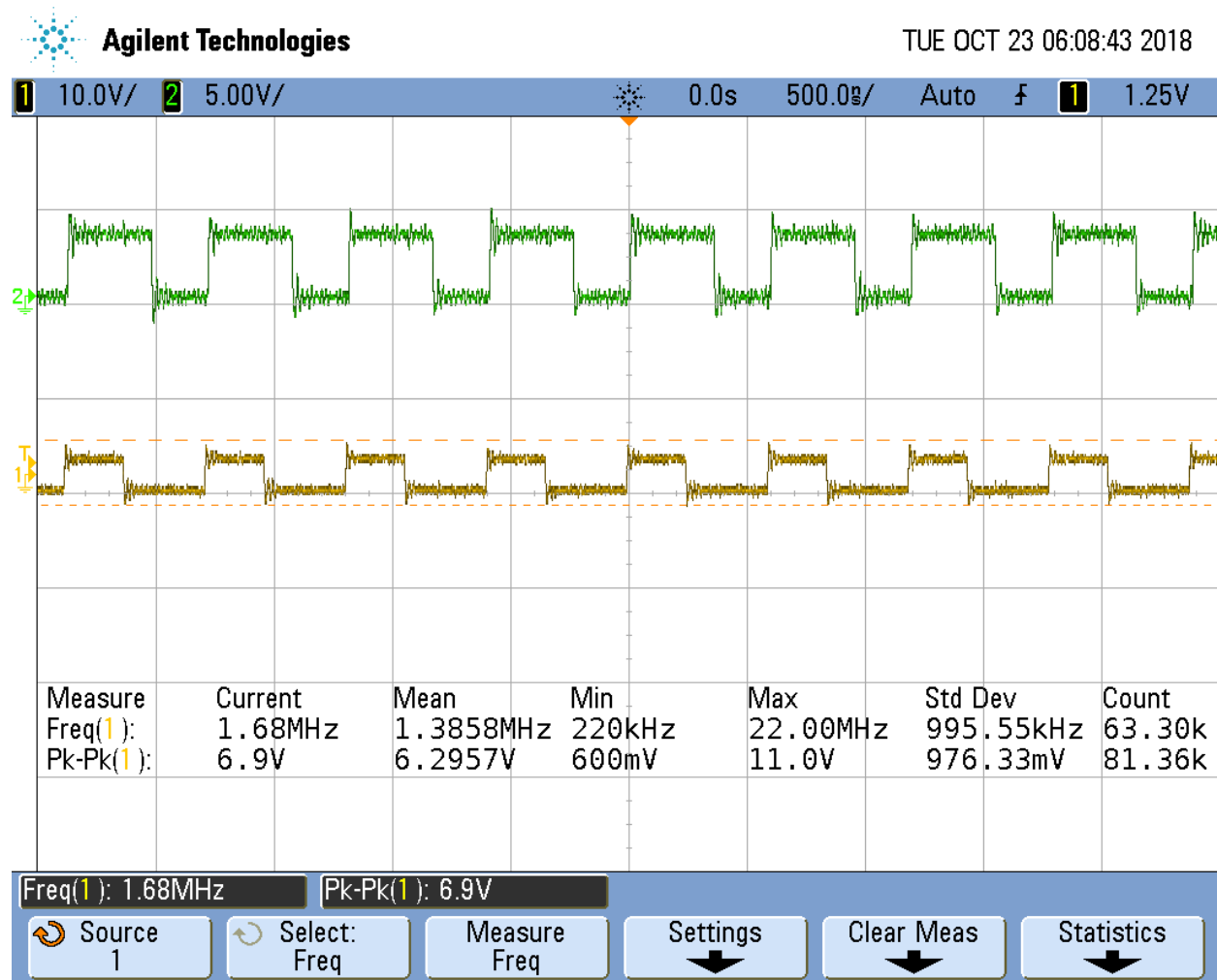


Figure 7: 5.5\_LoopPWM\_P8\_43andP8\_44

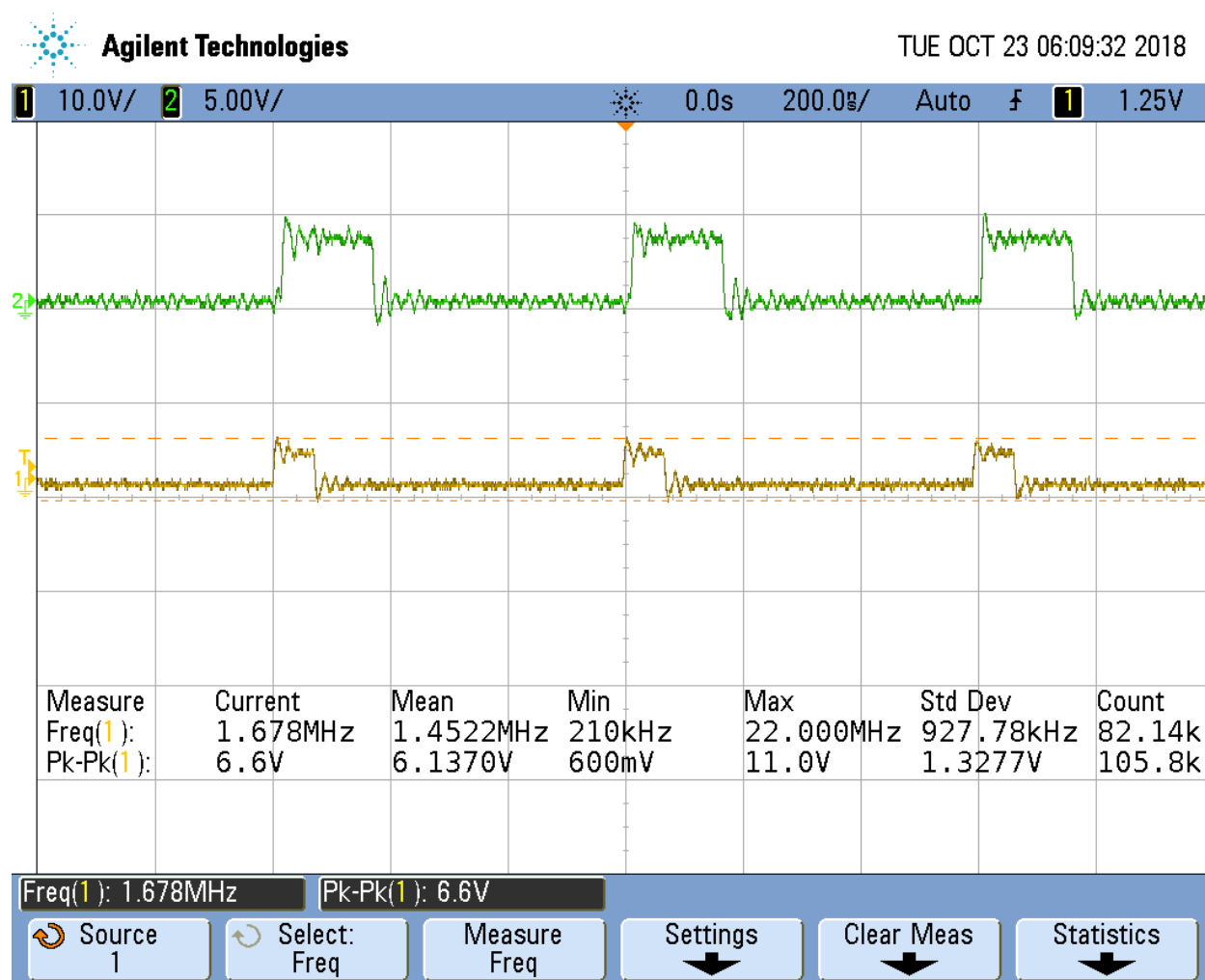


Figure 8: 5.5\_LoopPWM\_P8\_45andP8\_46



## 5.9. Reading an Input at Regular Intervals

You can see the resolution in the Picture 5.9Reading\_an\_Input. With the Oszi it was not possible to see a time delay. But the bone have to had a time delay.

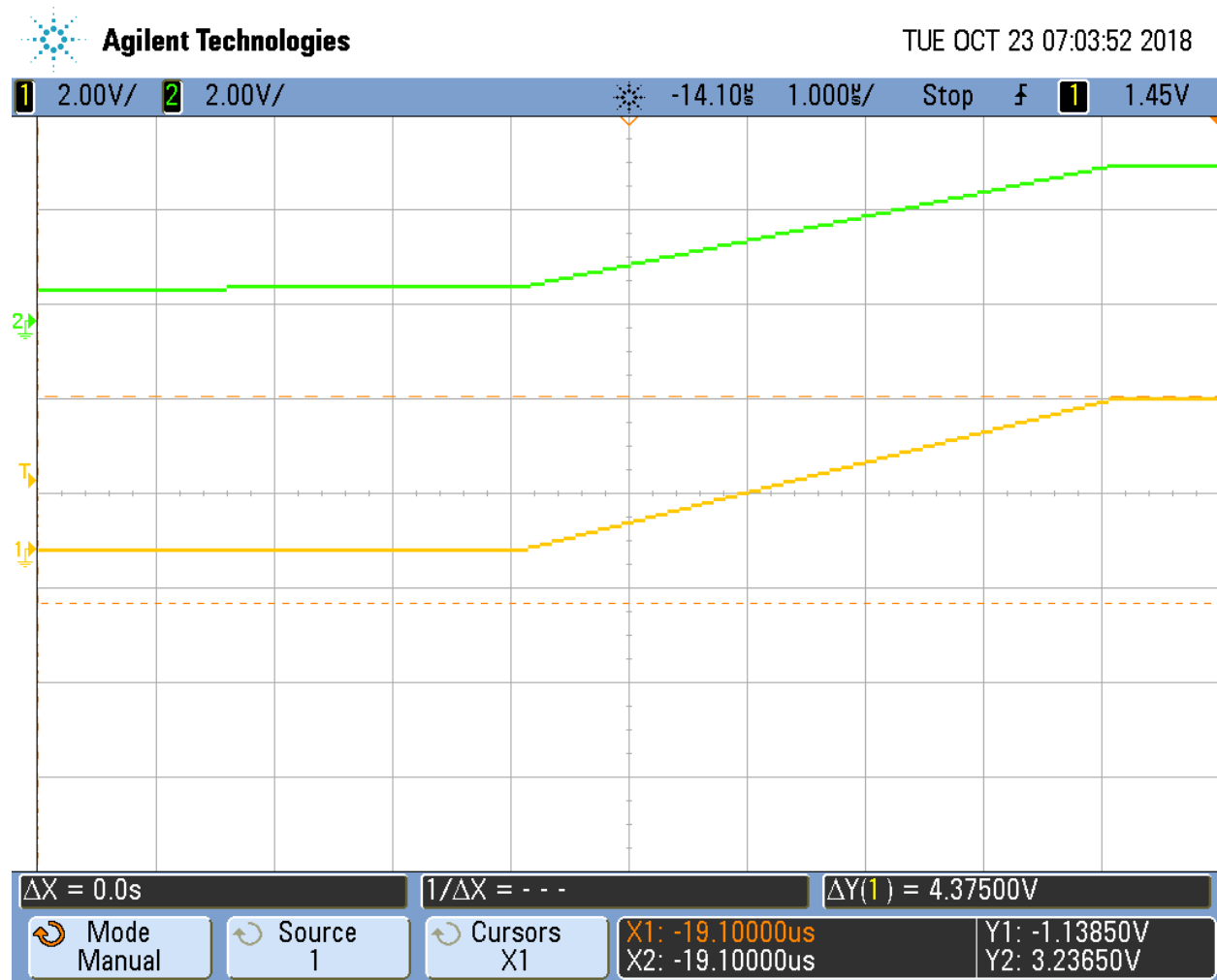


Figure 9: 5.9Reading\_an\_Input