1. Channel B issue always happen before channel A

2. The abnormal sec wave dead band seems different. I compare the rising edge and falling edge with PWM syncout single.

// === Action Qualifier SubModule - PH1, SEC === //

//

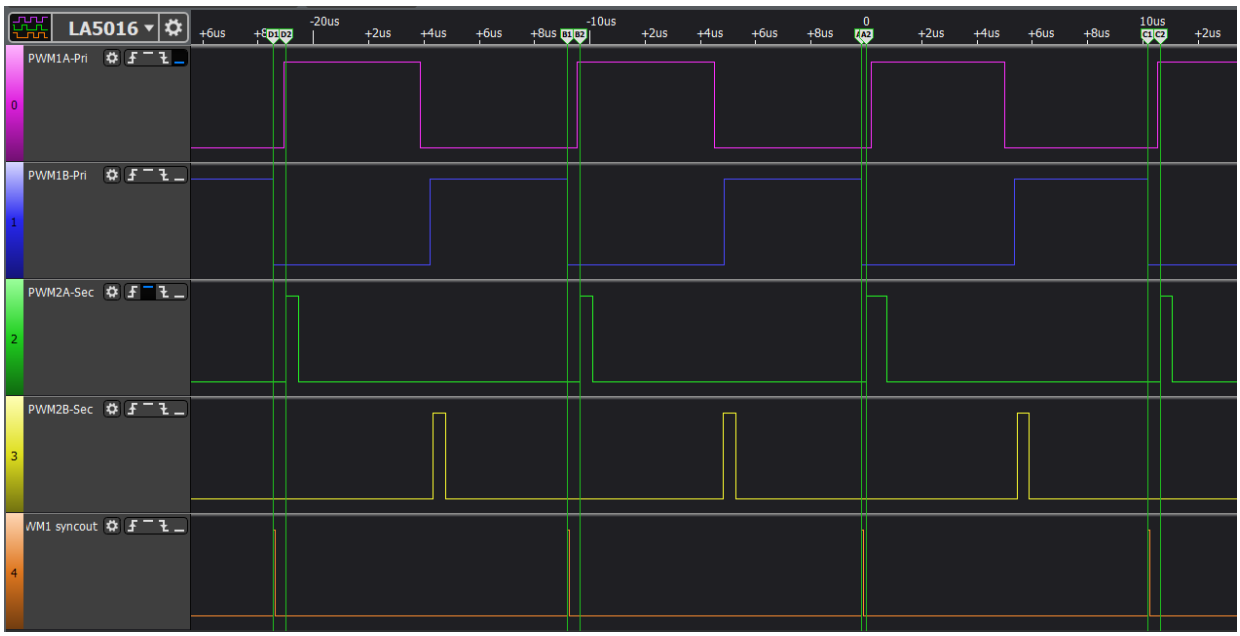
// EPWMA high on CTR = 0

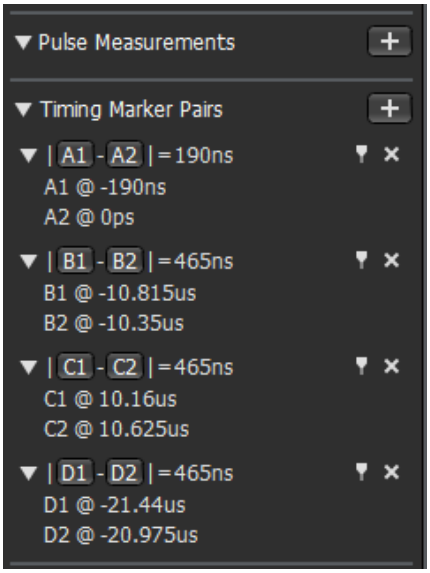
// EPWMA low on CTR = CMPA, in up count

// EPWMA low on CTR = PRD

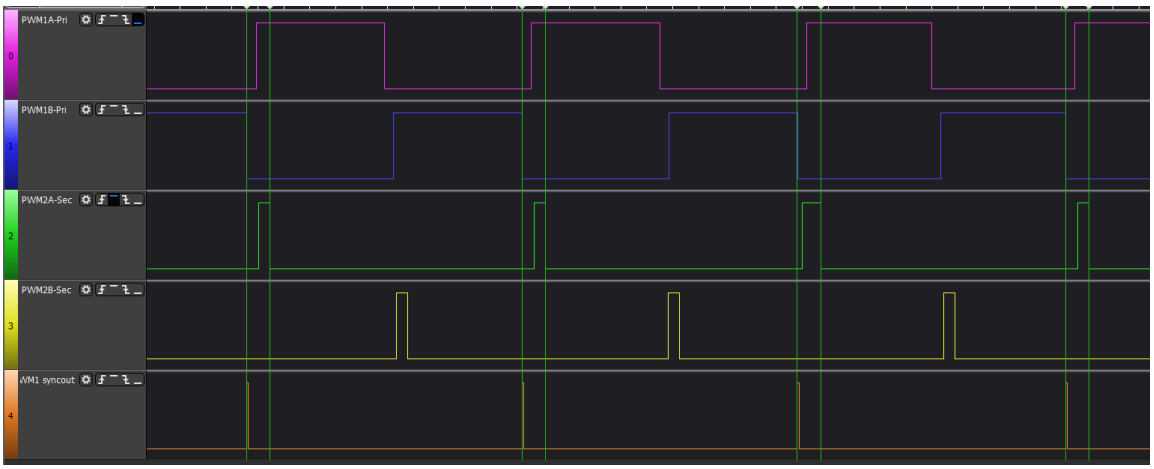
So the rising edge depends on the deadband, it seems abnormal one is too short.

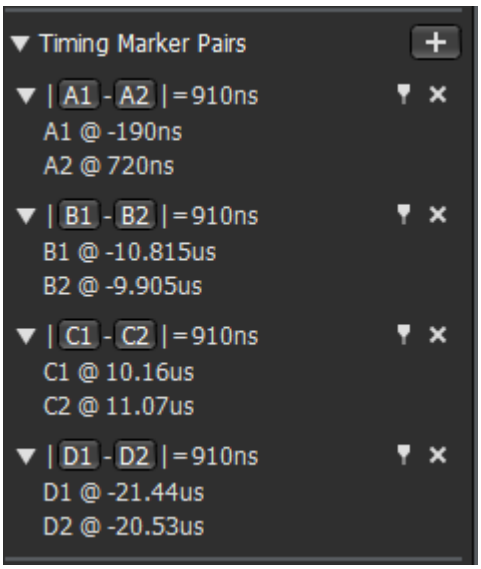
In my view, This can also match with why make a delay of the PWM count can solve the issue. It is just choose not update the 'too short' deadband.





The falling edge depends on the CMPA, it is the same for abnormal and normal, so it is OK.





3. The control ISR is based for PWM3 ISR and frequency is 50K Hz? Am I right?

```
#define LLC_CONTROL_ISR_TRIGGER                 INT_EPWM3
#define LLC_CONTROL_ISR_TRIGGER_ACK_GROUP       INTERRUPT_ACK_GROUP3
```

#define LLC_CONTROL_ISR_PERIOD_TICKS (uint32_t)(PWMSYSCLOCK_FREQ / LLC_CONTROL_ISR_FREQ)

Then my question is, why the Deadband and CMPA is same for 1st, 2nd and 4th time in my waveform, and different for 3rd one?
And I also checked the TRM, and I found this.

When DBRED/DBFED active is loaded with a new shadow value while DB counters are counting, the new DBRED/DBFED value only affects the NEXT PWMx edge and not the current edge.

Note

When DBRED/DBFED active is loaded with a new shadow value while DB counters are counting, the new DBRED/DBFED value only affects the NEXT PWMx edge and not the current edge.

Since global reload happened on zero, and DBRED is counting at zero, so I will suspect the DBRED will always delayed 1 PWM edge. If so, it can also explain why B channel will have issue before A chanenel.
However, I did not find a way to verify it.
At last, I also make a debug GPIO to see the rough time of one shot reload enable.

```
GPIO_writePin(FOR_DEBUG_PIN, 1);
EPWM_setGlobalLoadOneShotLatch(LLC_PRI1_PWM_BASE);
GPIO_writePin(FOR_DEBUG_PIN, 0);
```

It will happen one shot reload is happen really near PWM counter = zero, which makes analysis more difficult.