Hands-On Exercise (PWM_ADC_SYN)

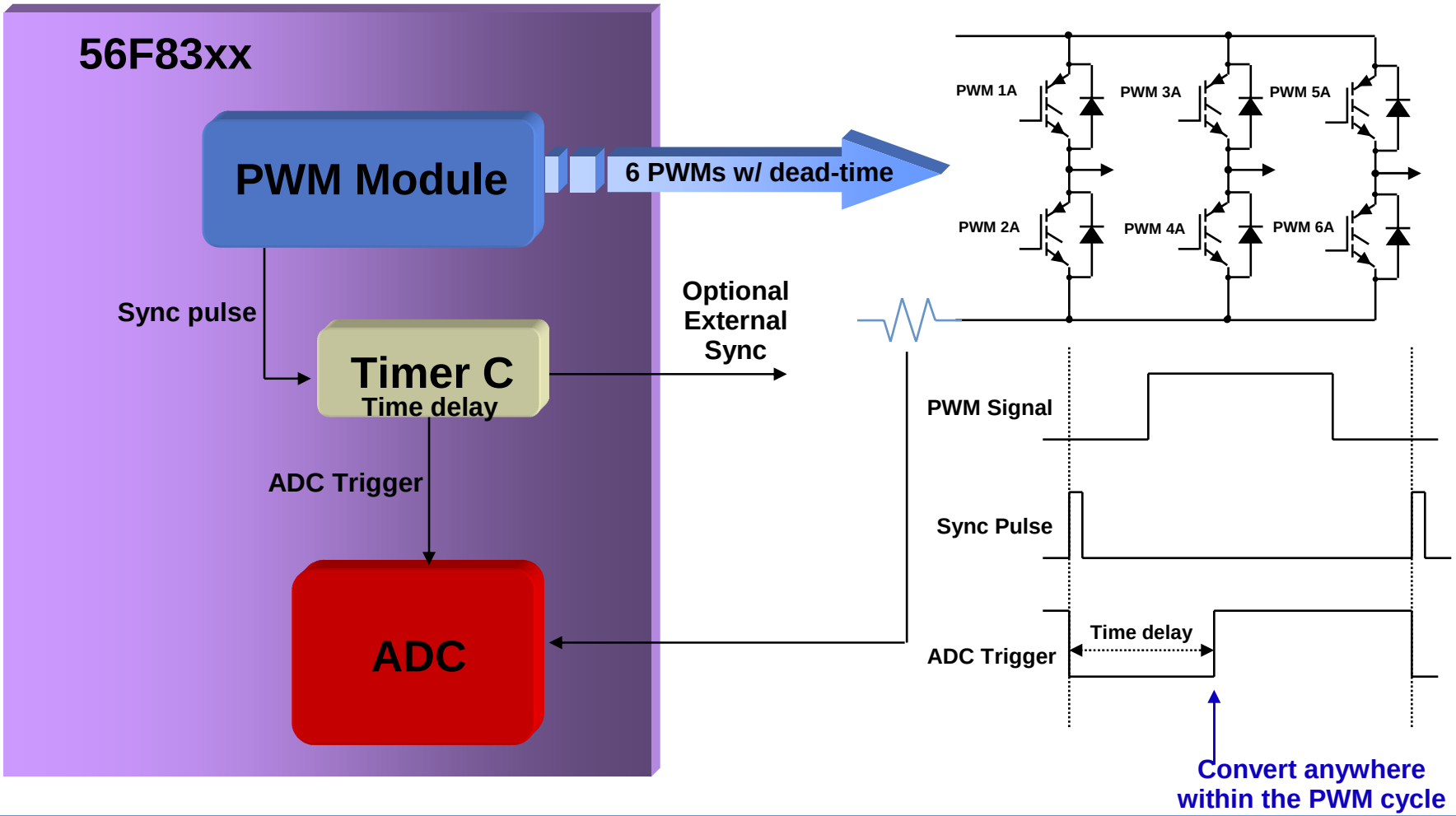
Hands-On Training

Prepared by Kenny Lam (AP TSPG AE)

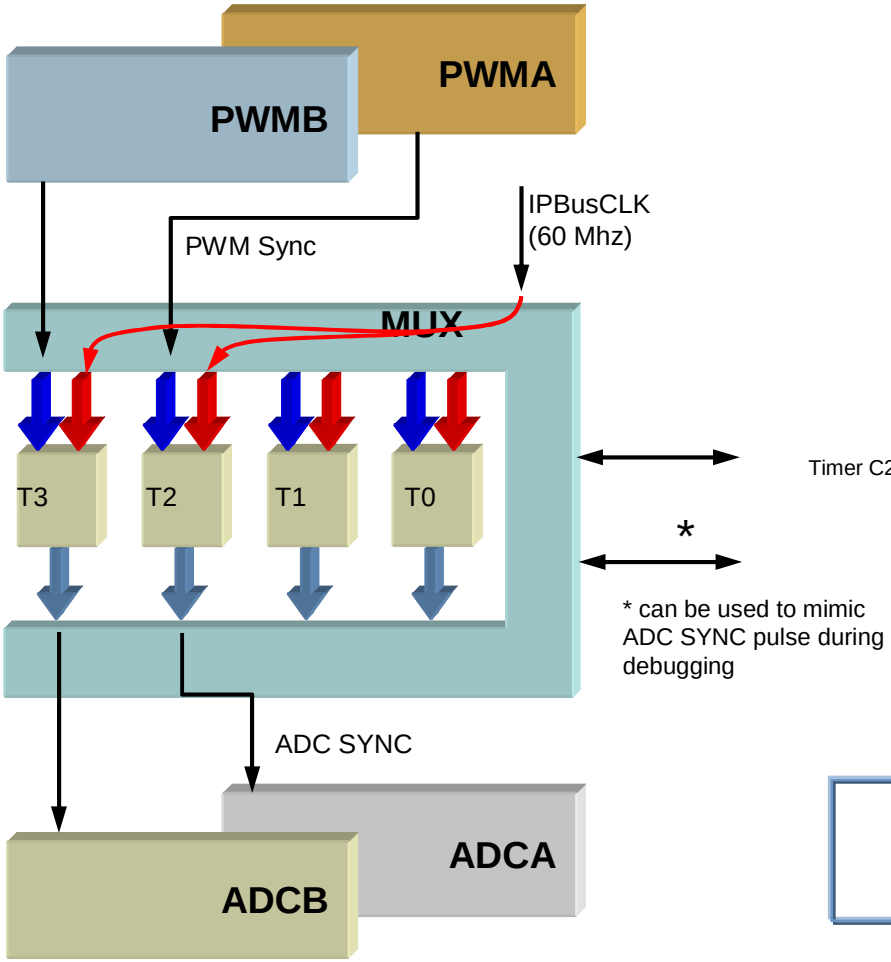
Approach

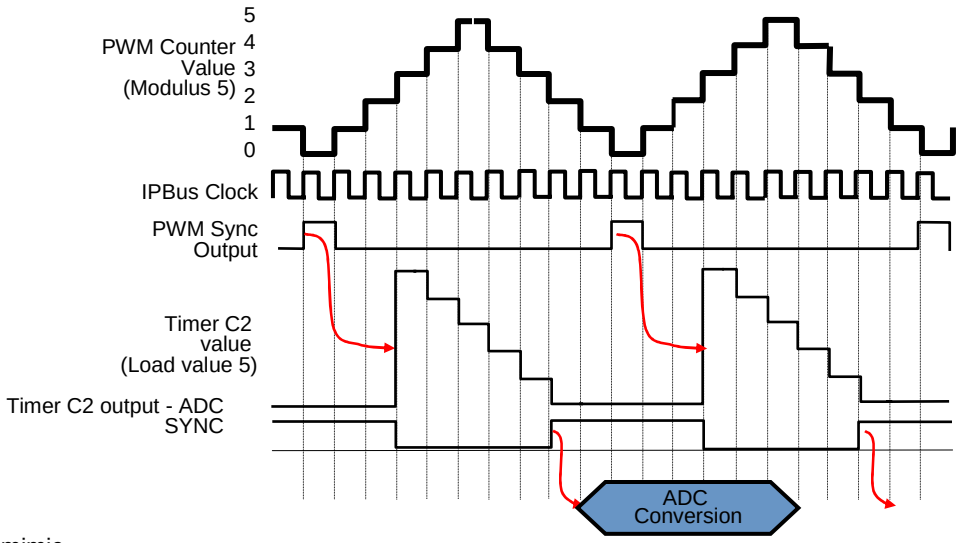
- Use Processor Expert Beans to implement Target System application
  - ✓ Use 56F83xx PWM0 with Internal TimerC Channel 2 to trigger ADCA (Channel 0) .
  - ✓ Download and Execute on 56F83xx EVM

ADC Synchronization from the PWM Module



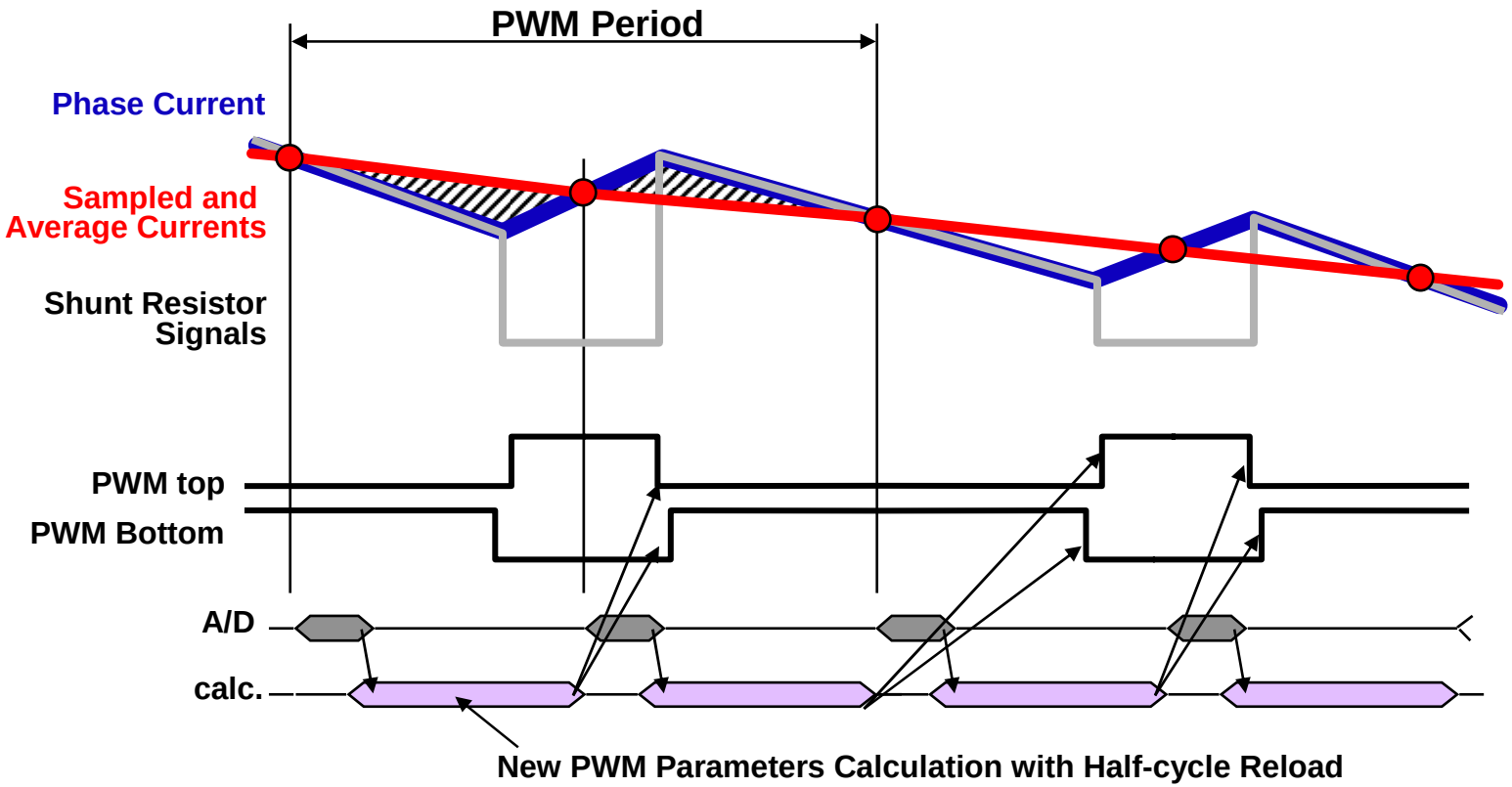
ADC-PWM Synchronization for 56F83XX





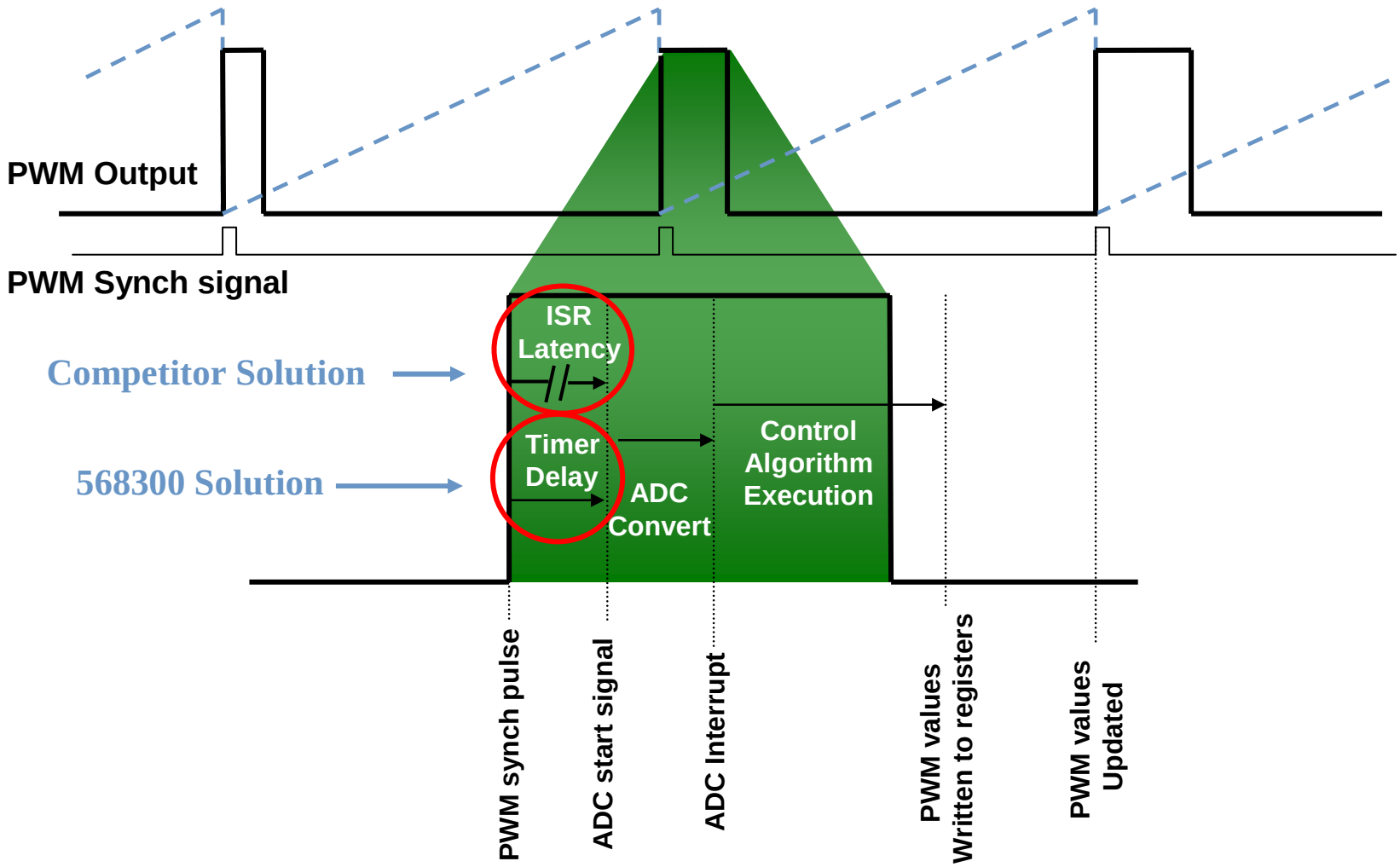
PWM, QUADTimer and ADC can communicate internally with no CPU support

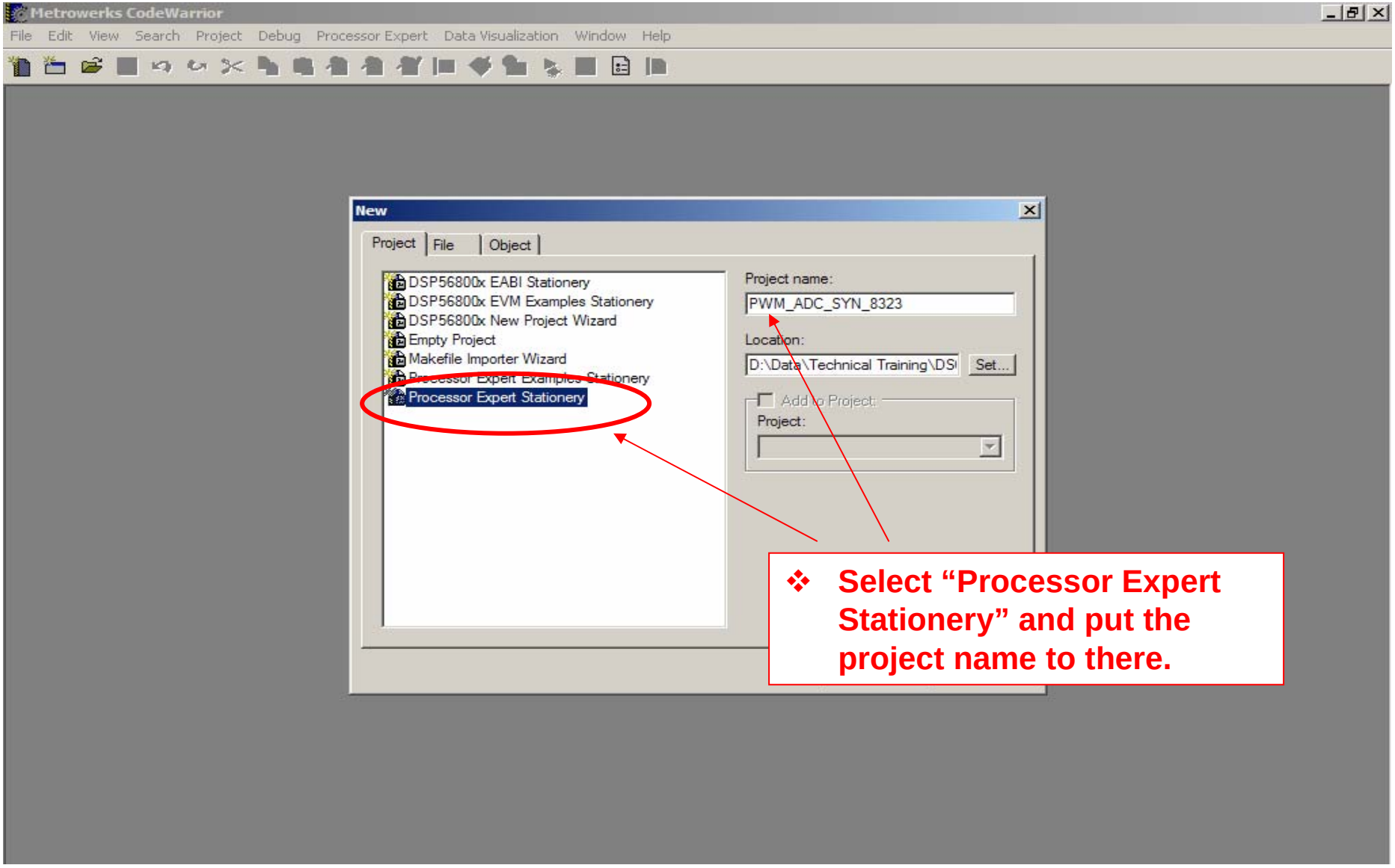
A/D Converters - PWM Synchronization Benefits

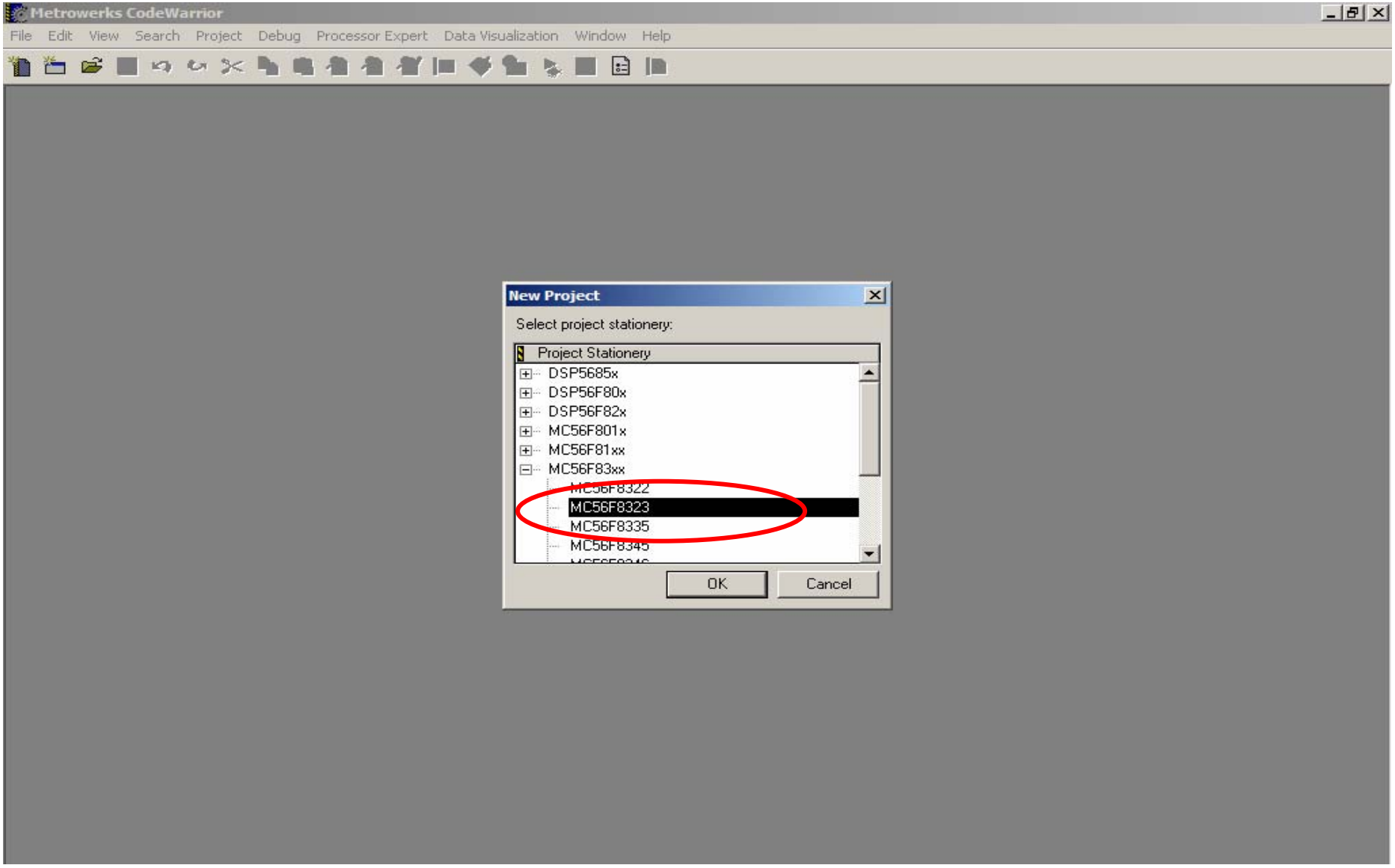


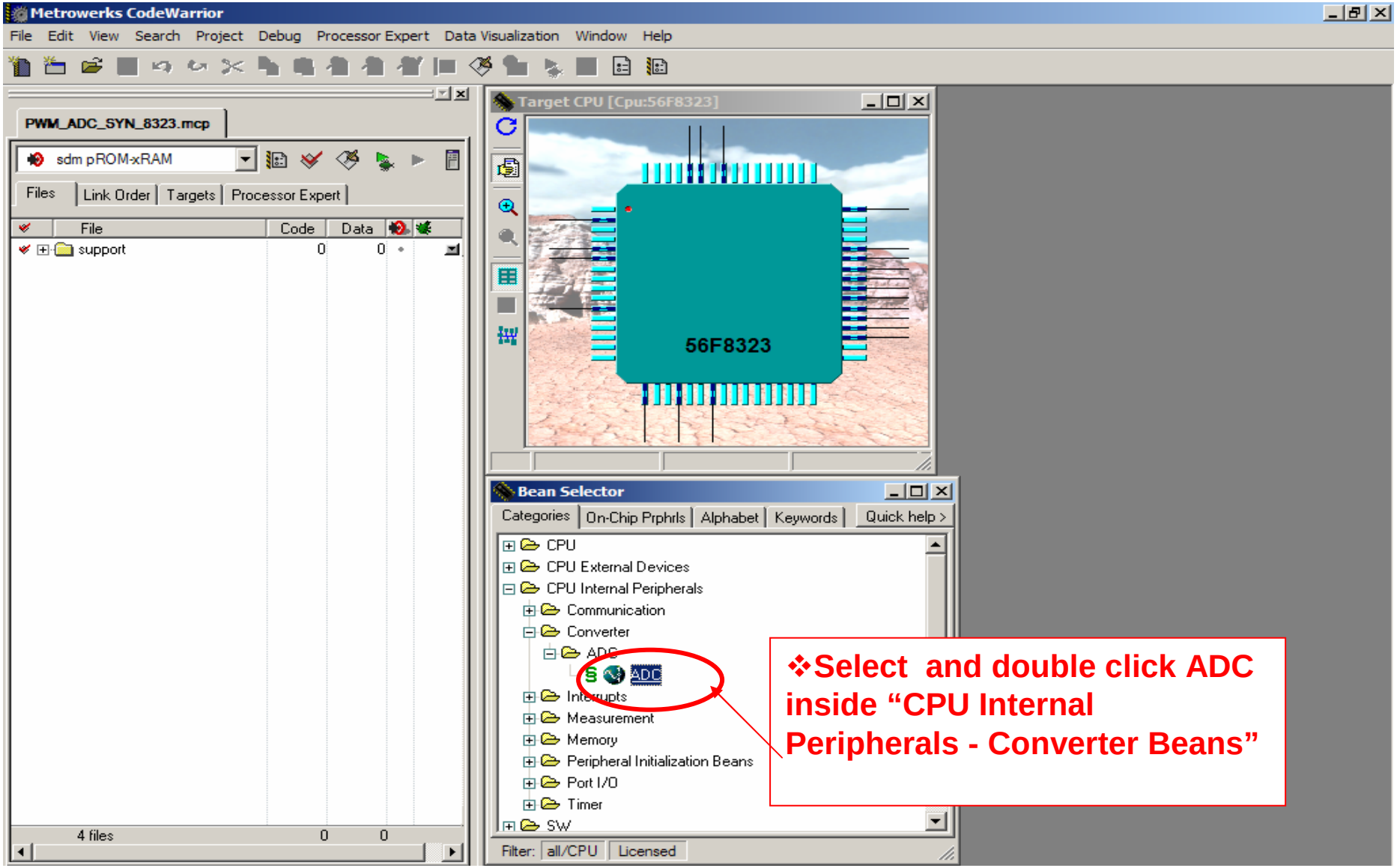
- ✓ ADC Sampling helps to filtering the measured current - antialiasing.
- ✓ Noise free ADC sampling when the power switch is not acting
- ✓ ADC sample is taken when shunt resistor signal (information) is available

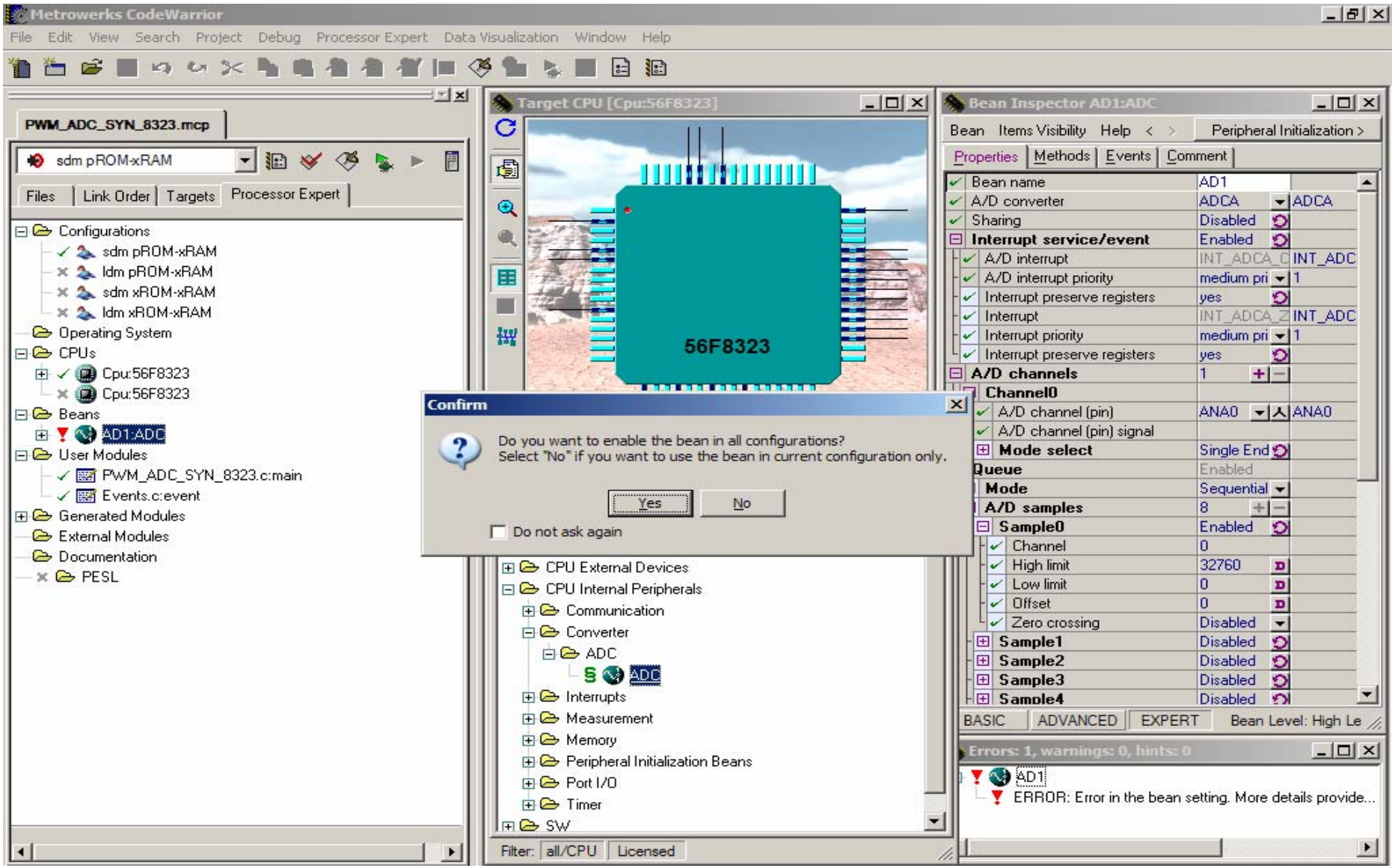
ADC Synchronization with the PWM

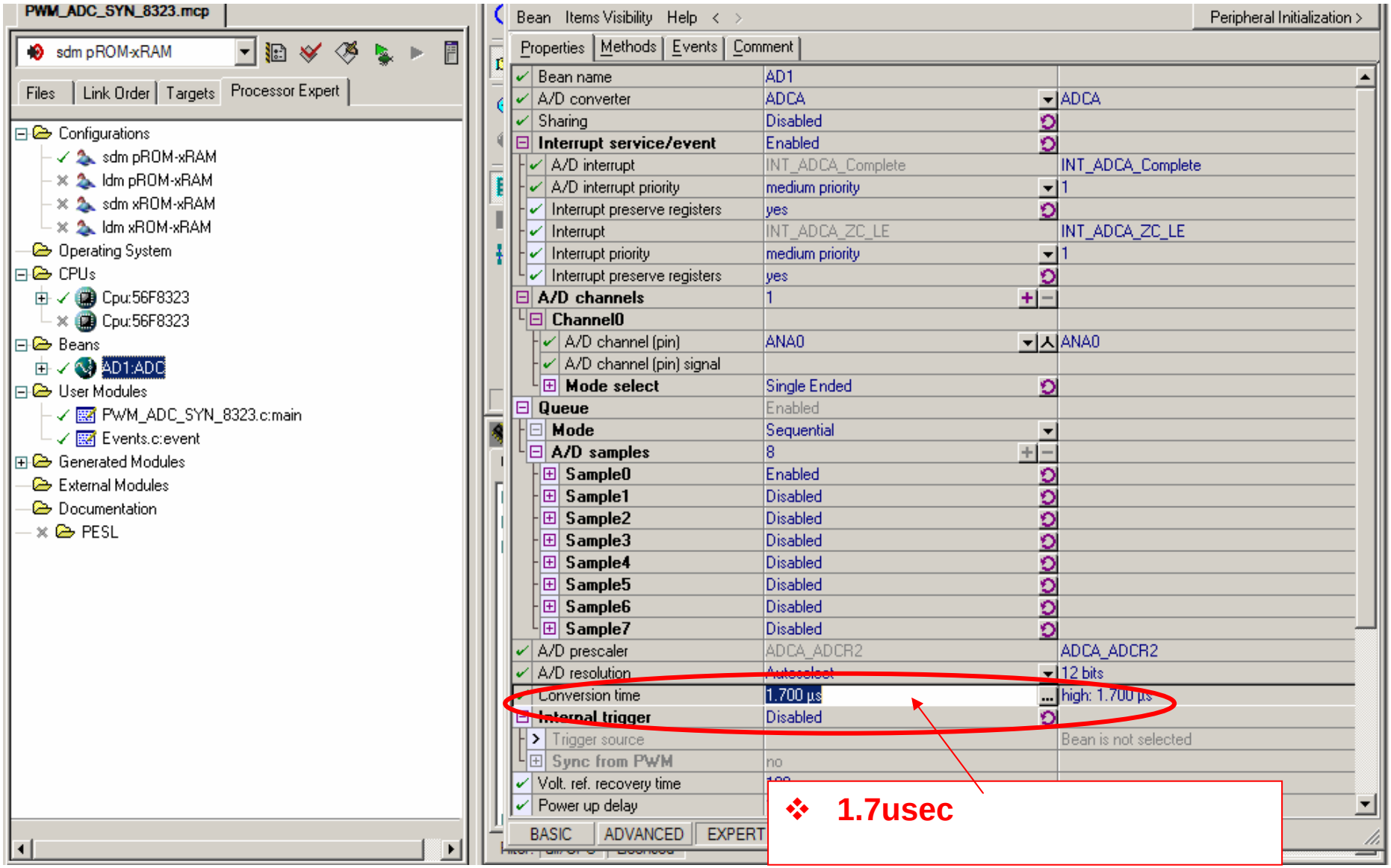


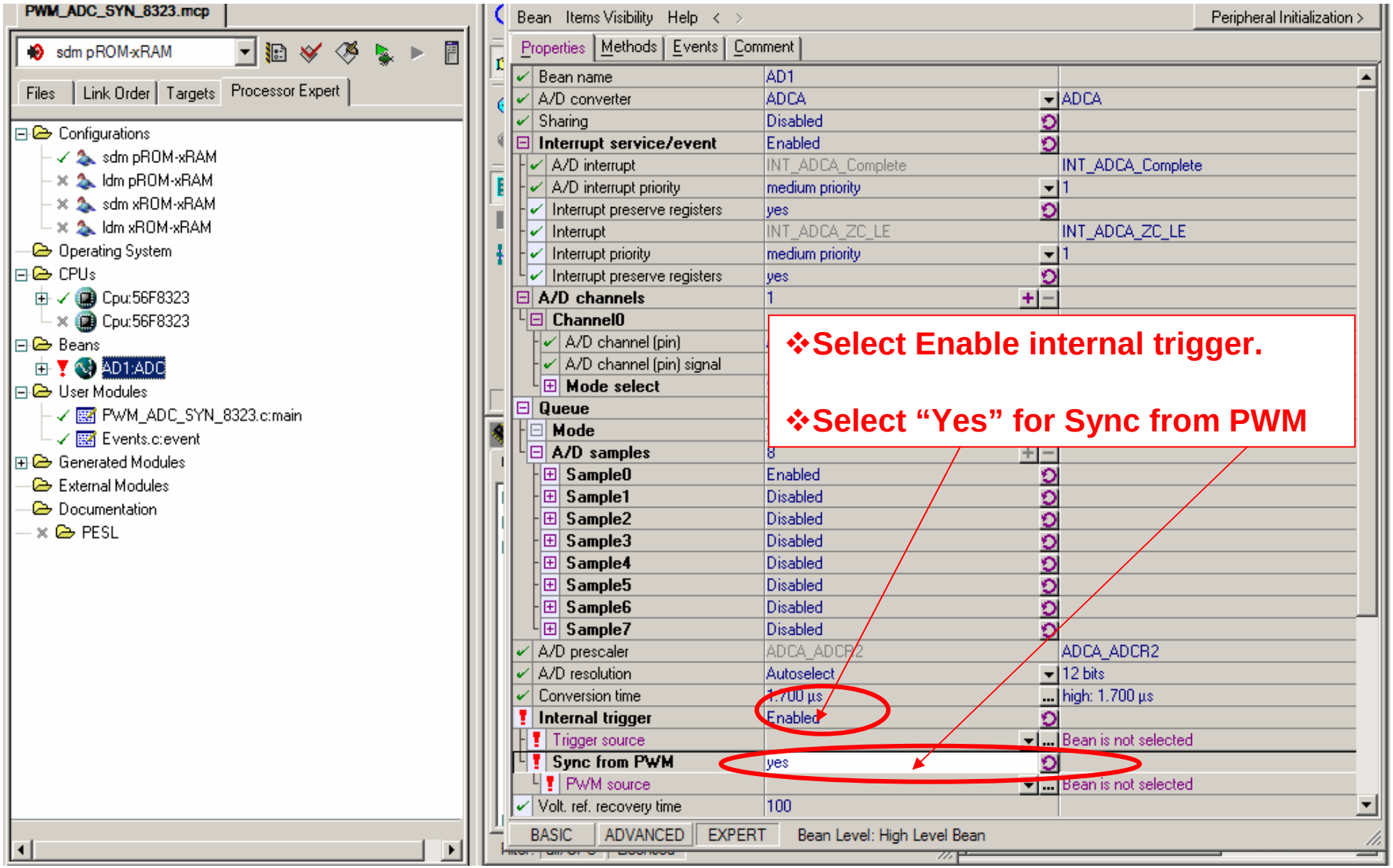


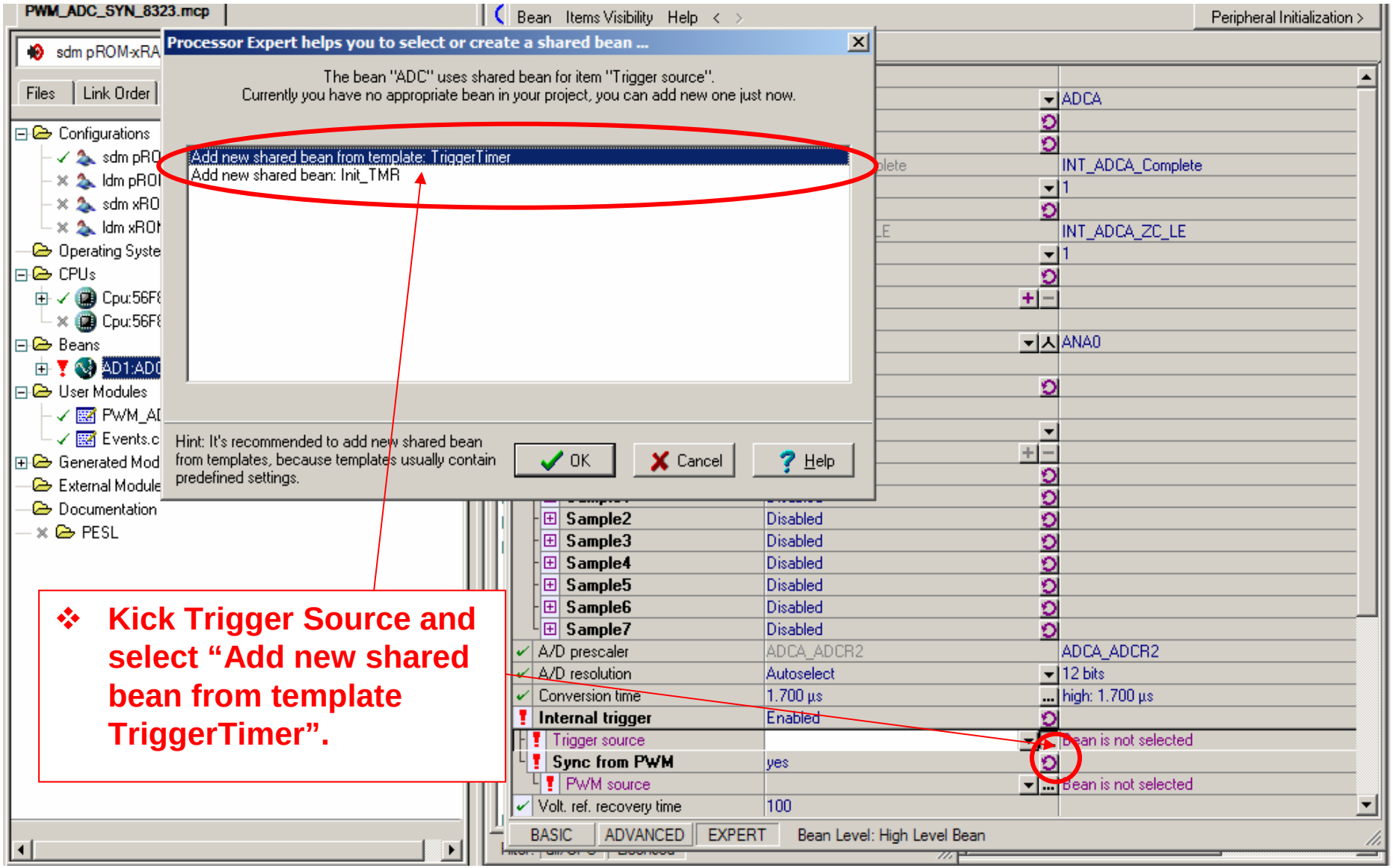




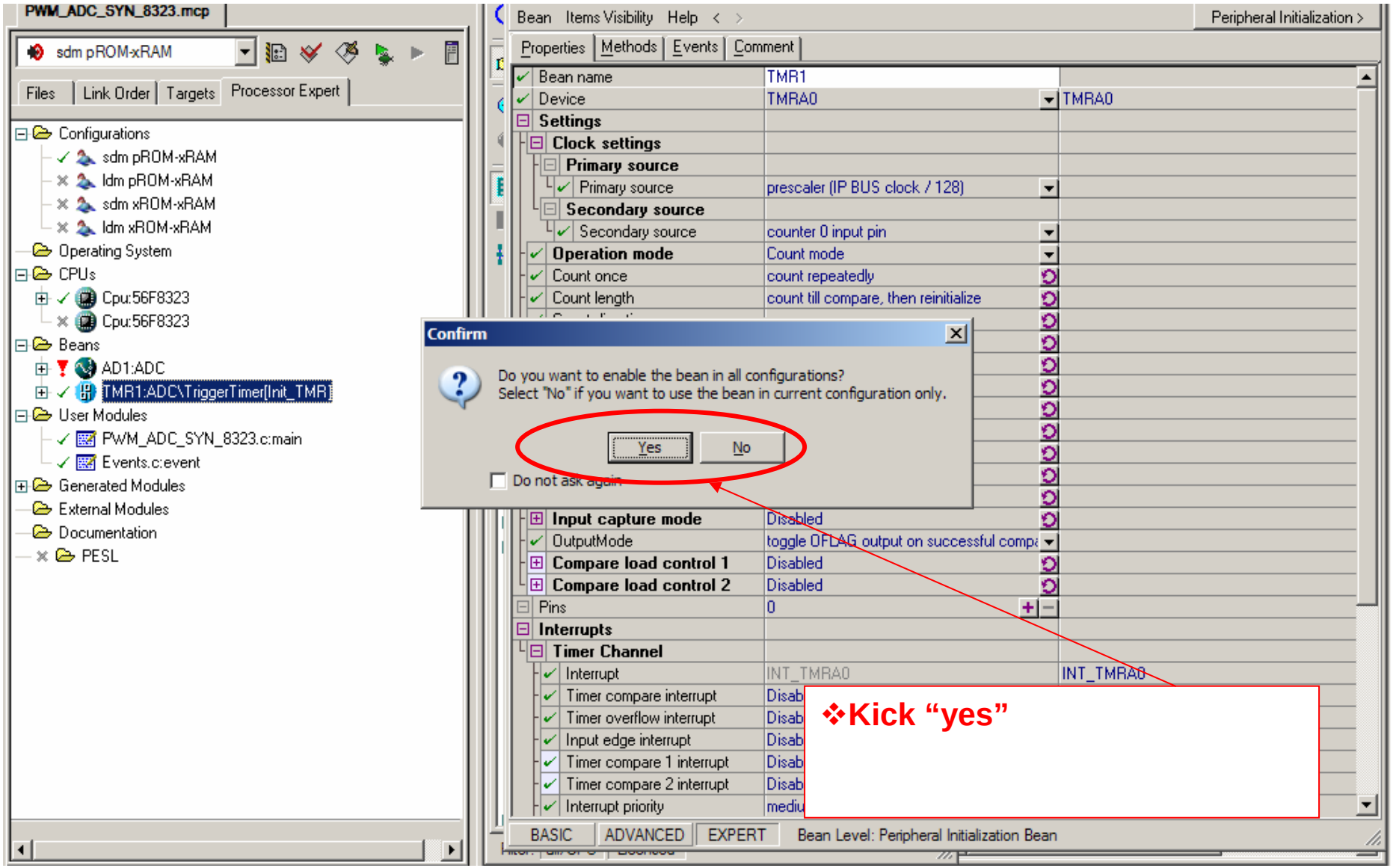


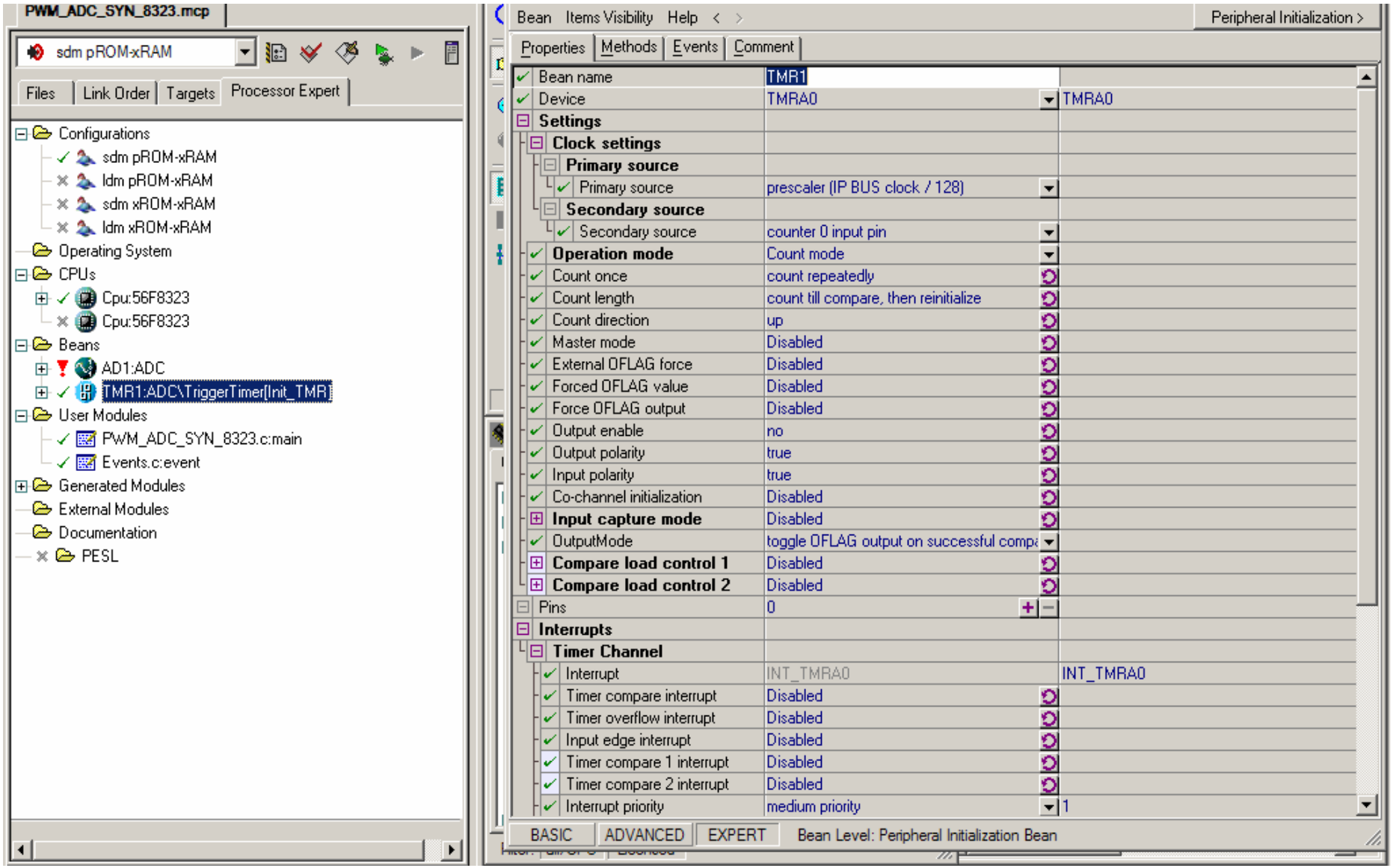


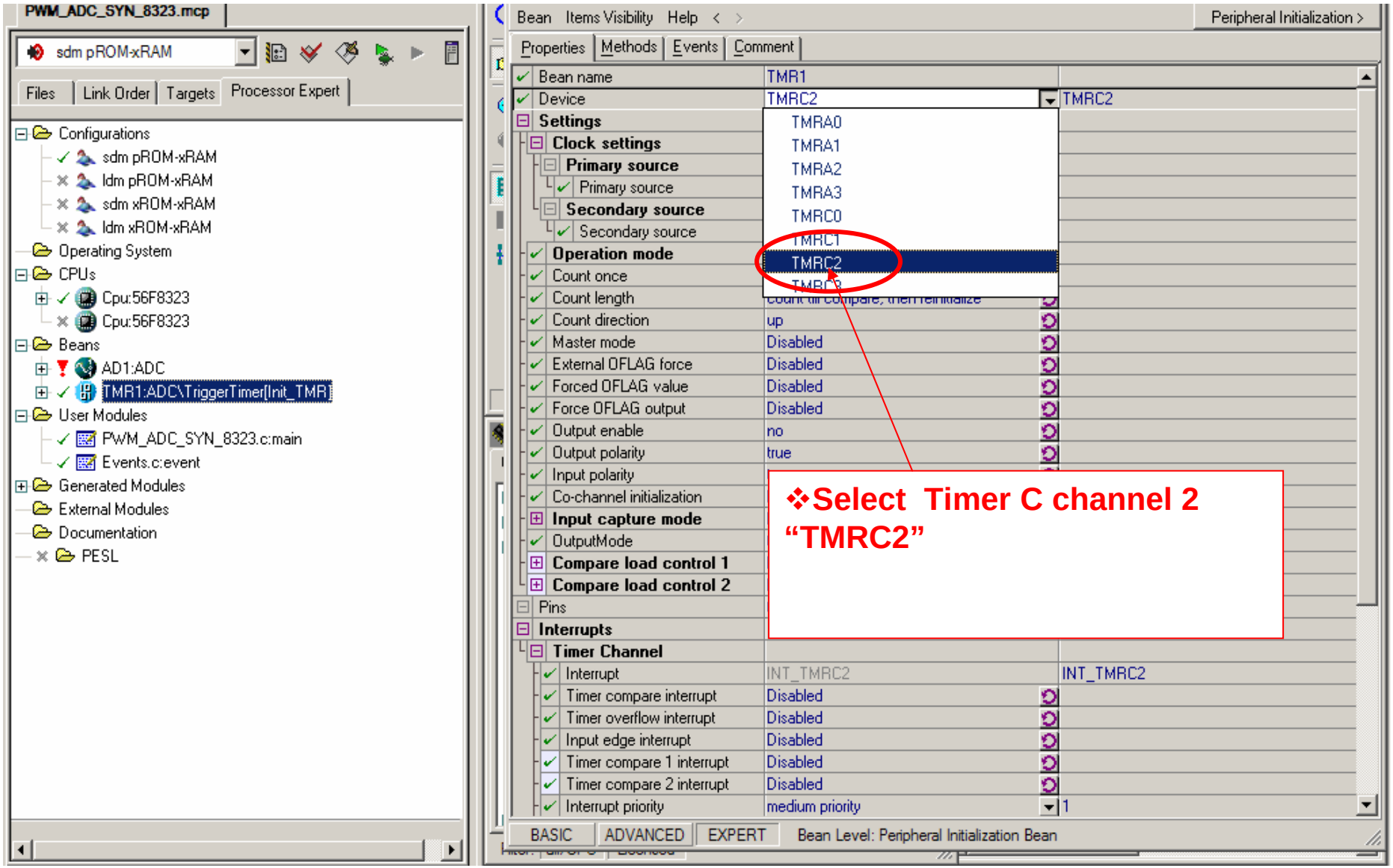


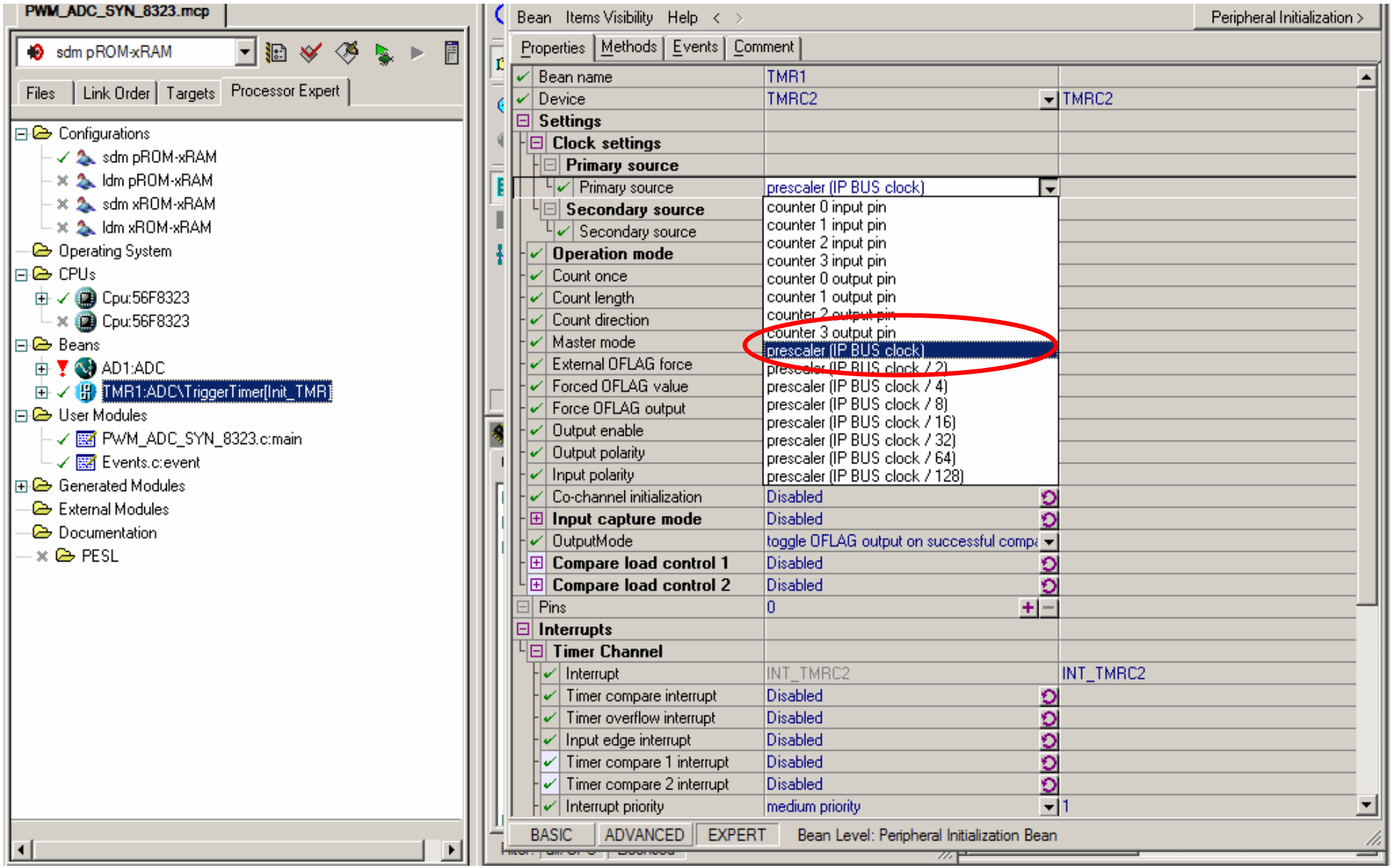


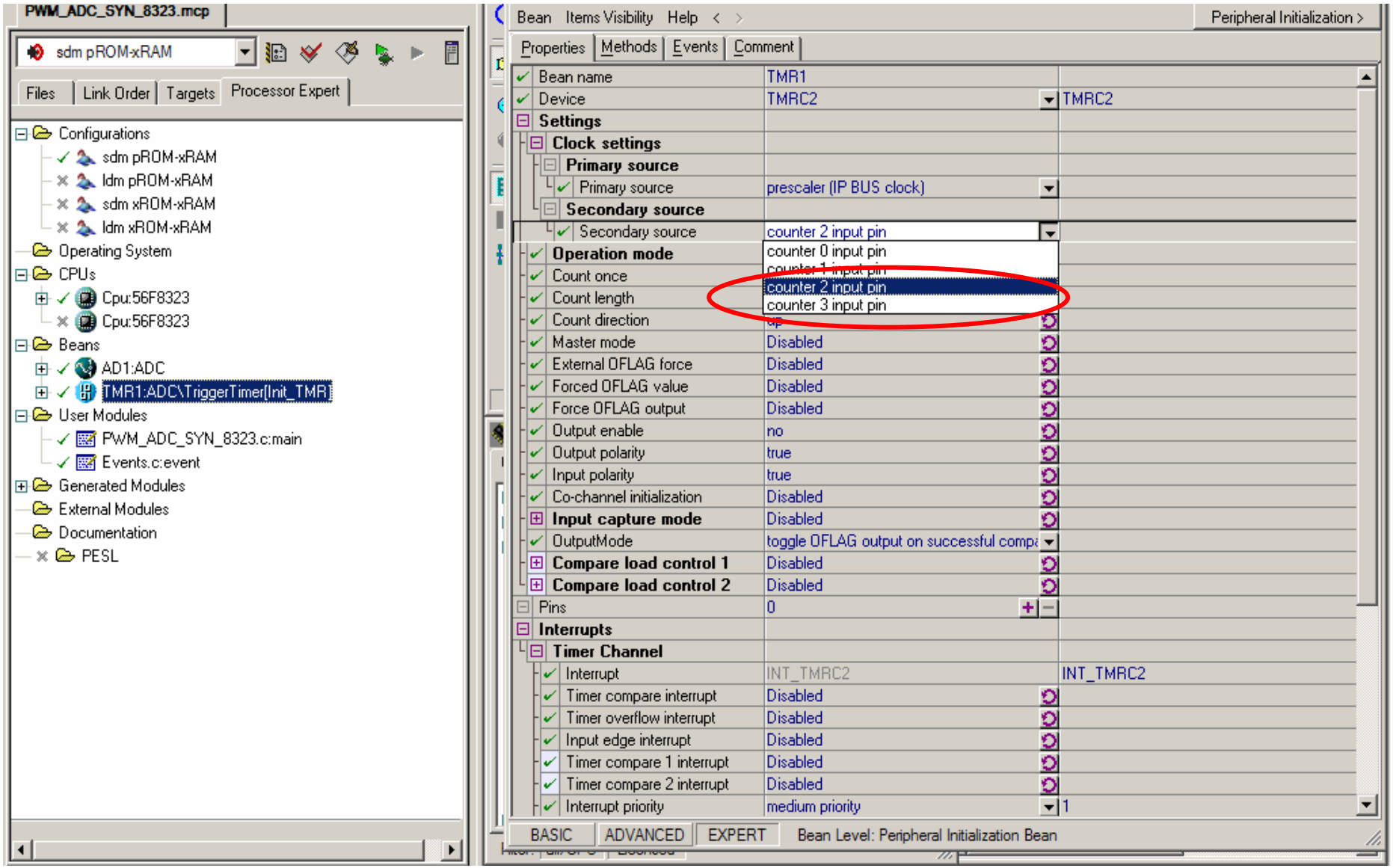
- **Kick Trigger Source and select "Add new shared bean from template TriggerTimer".**

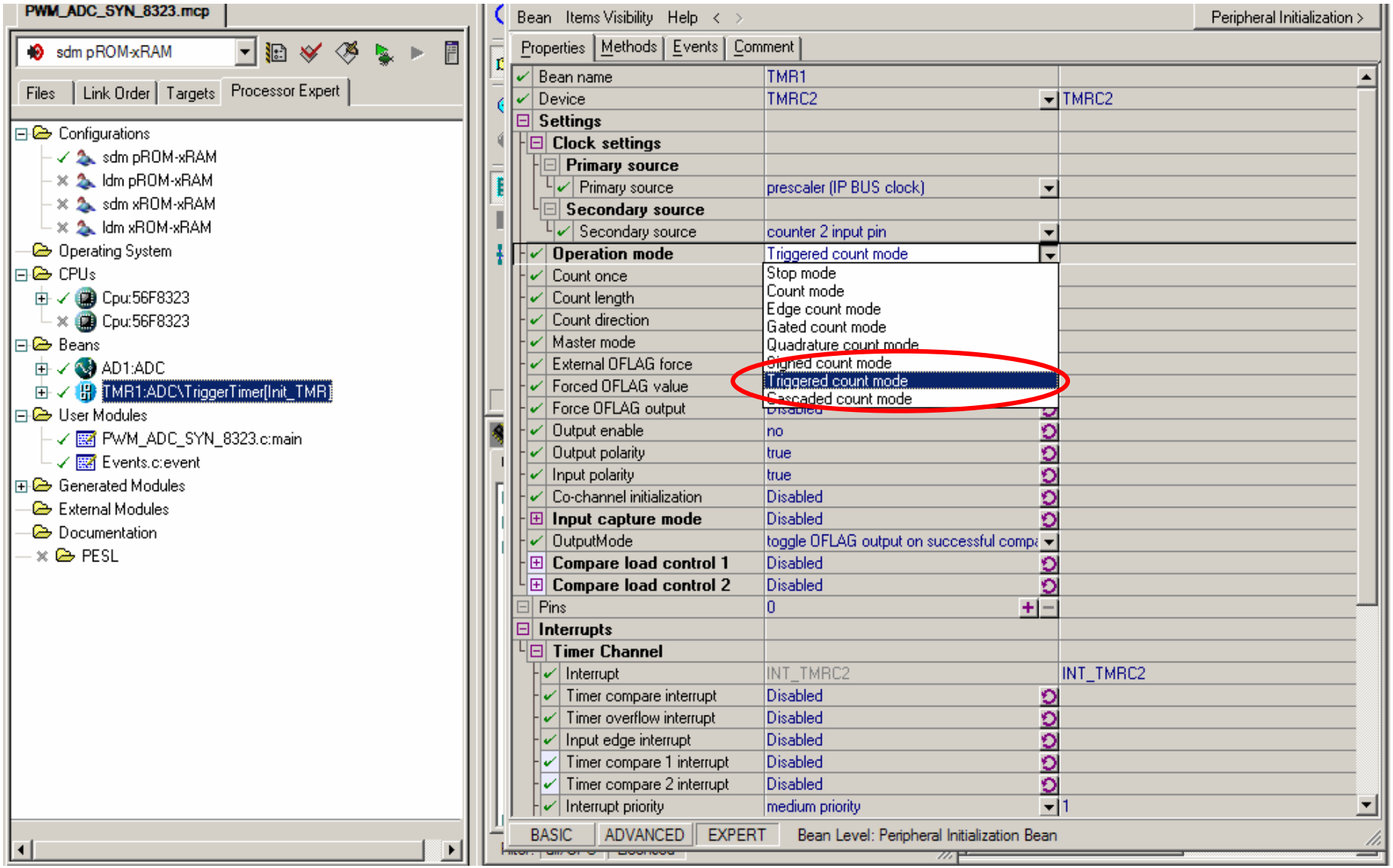


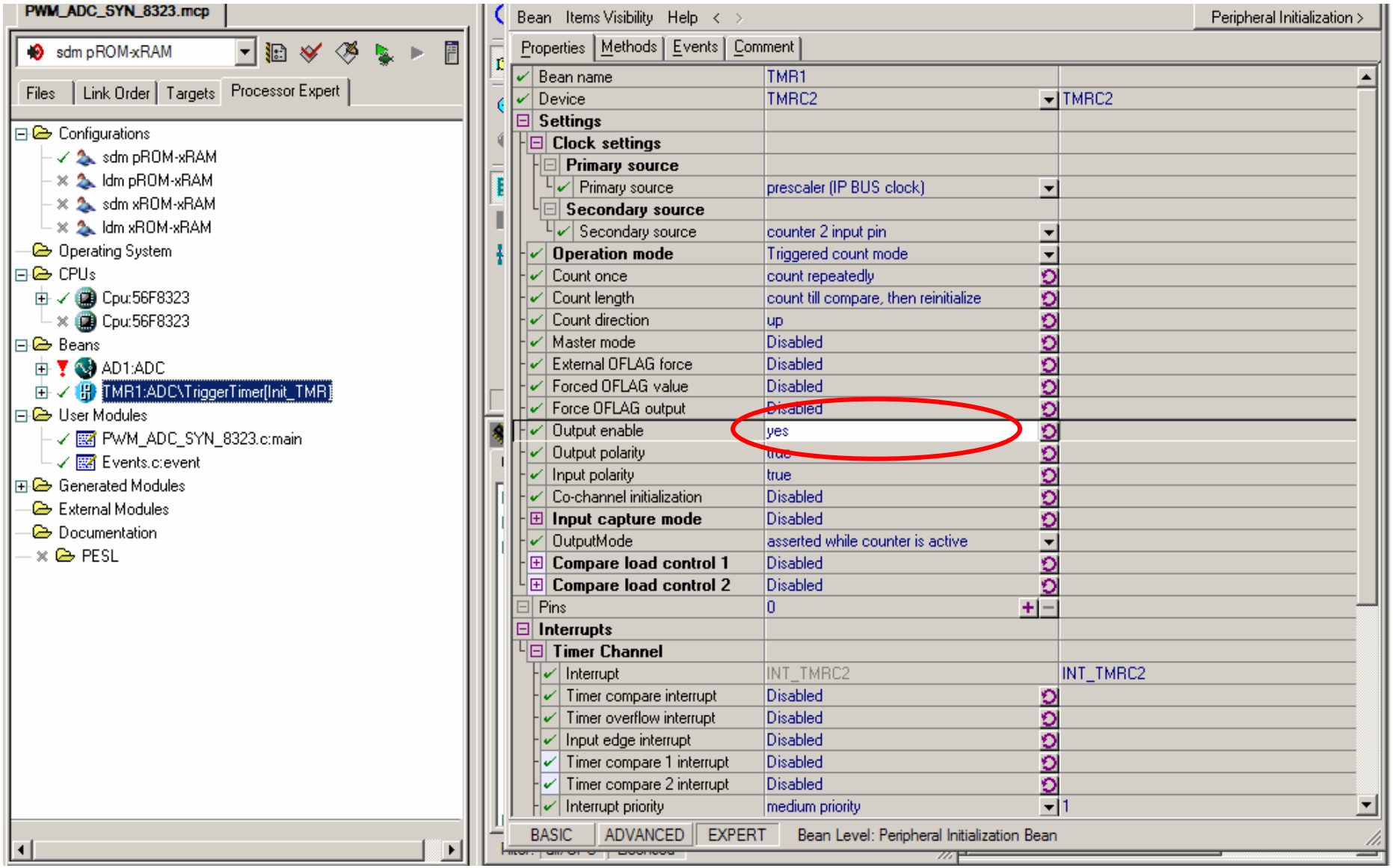


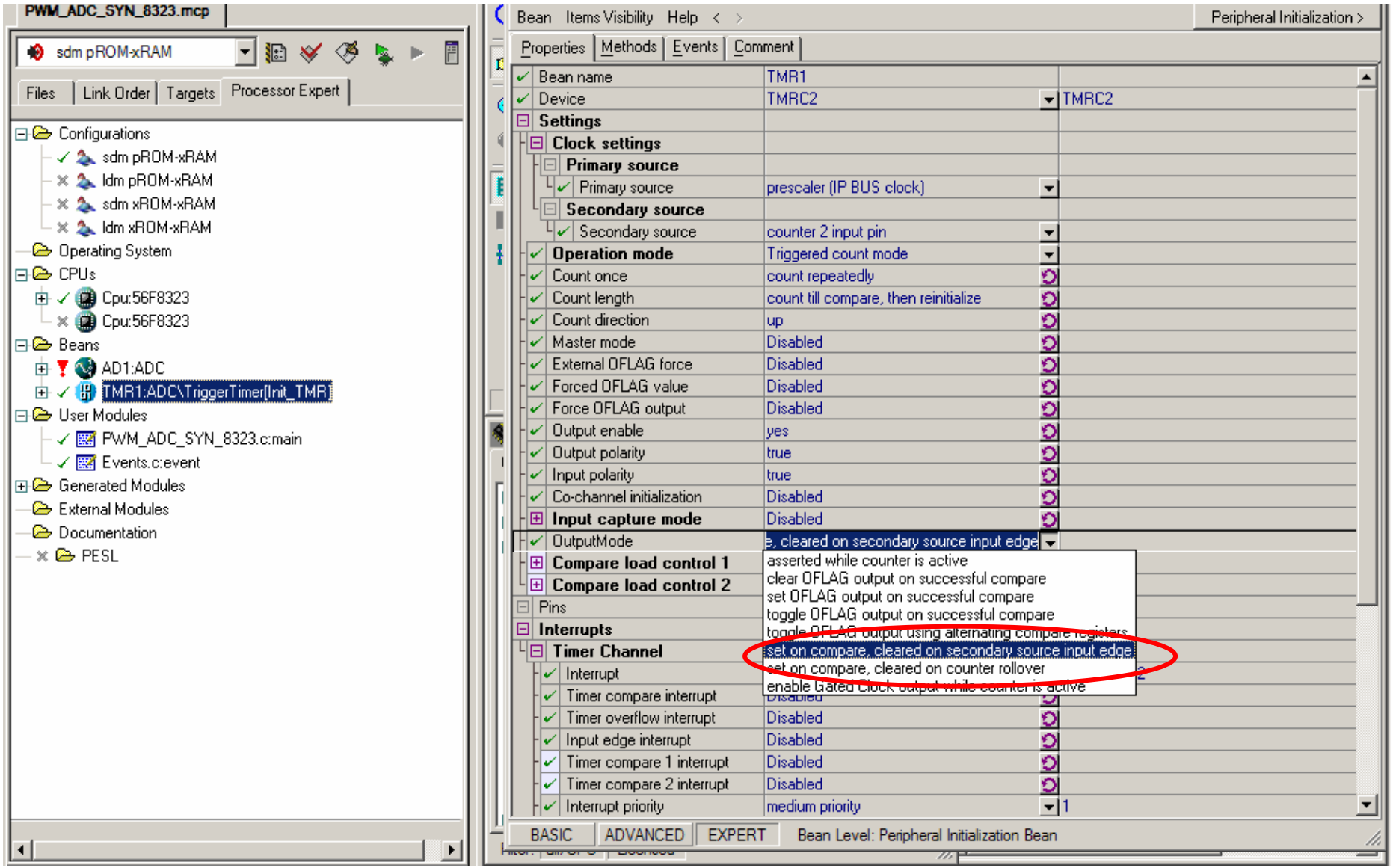


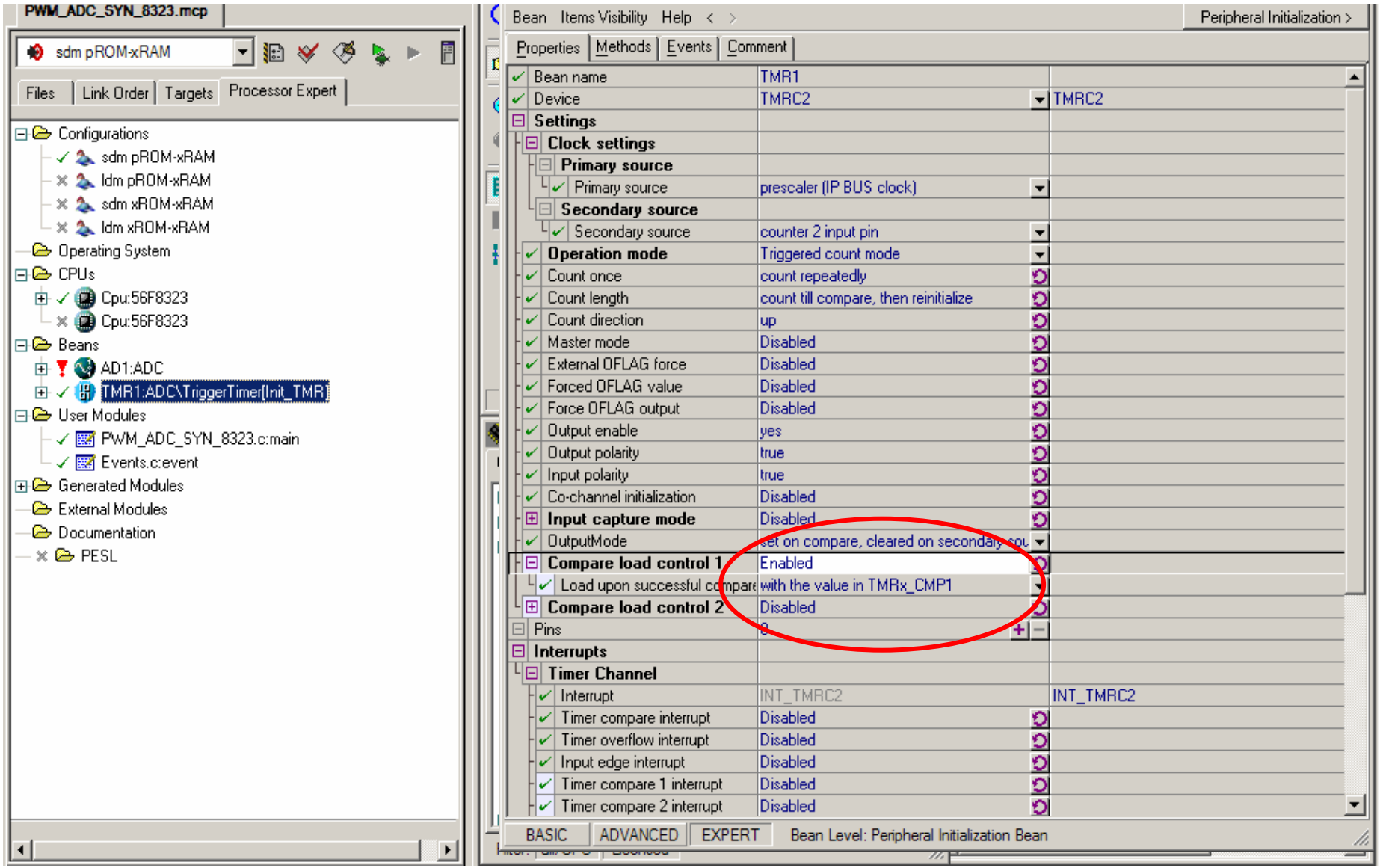


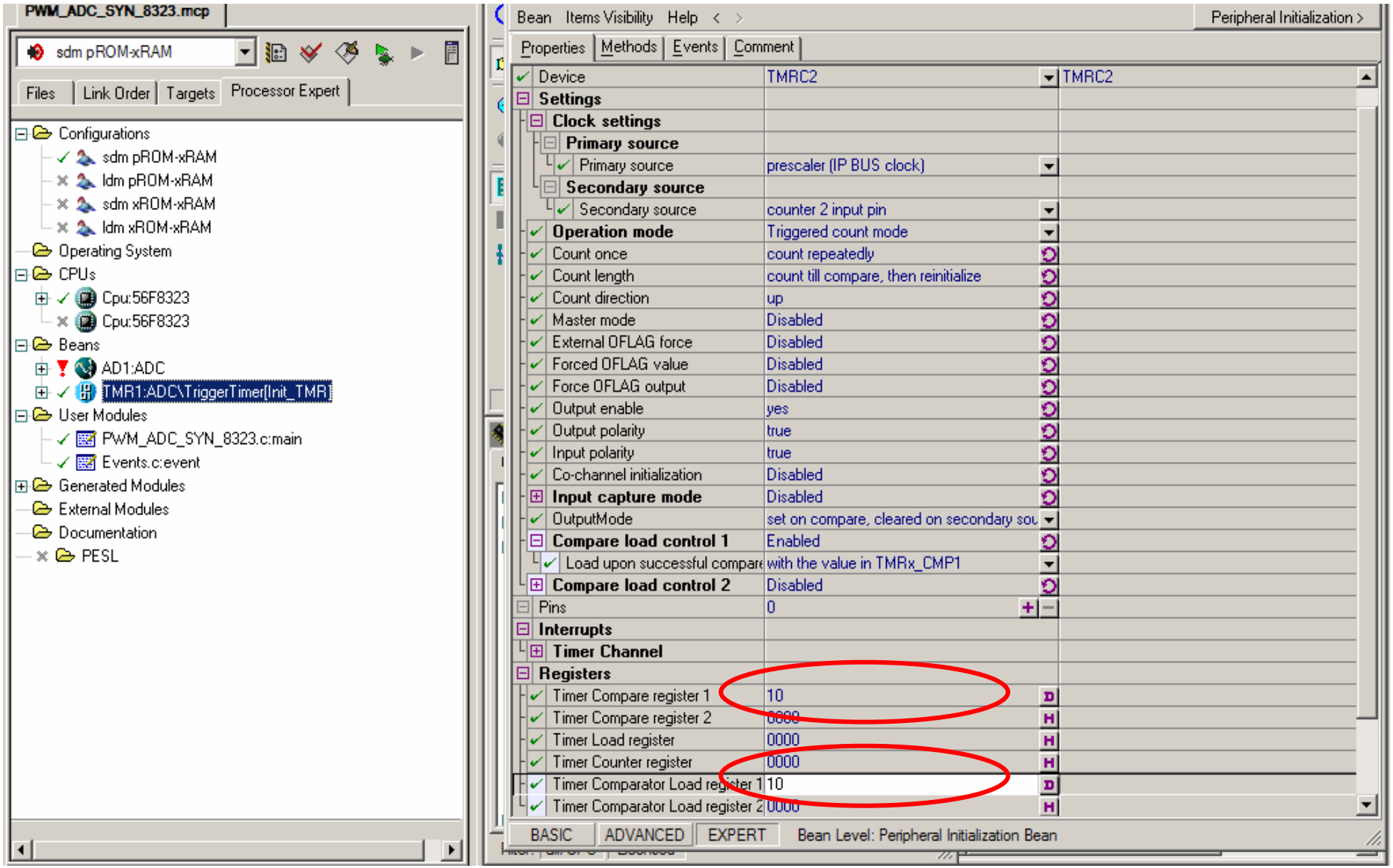


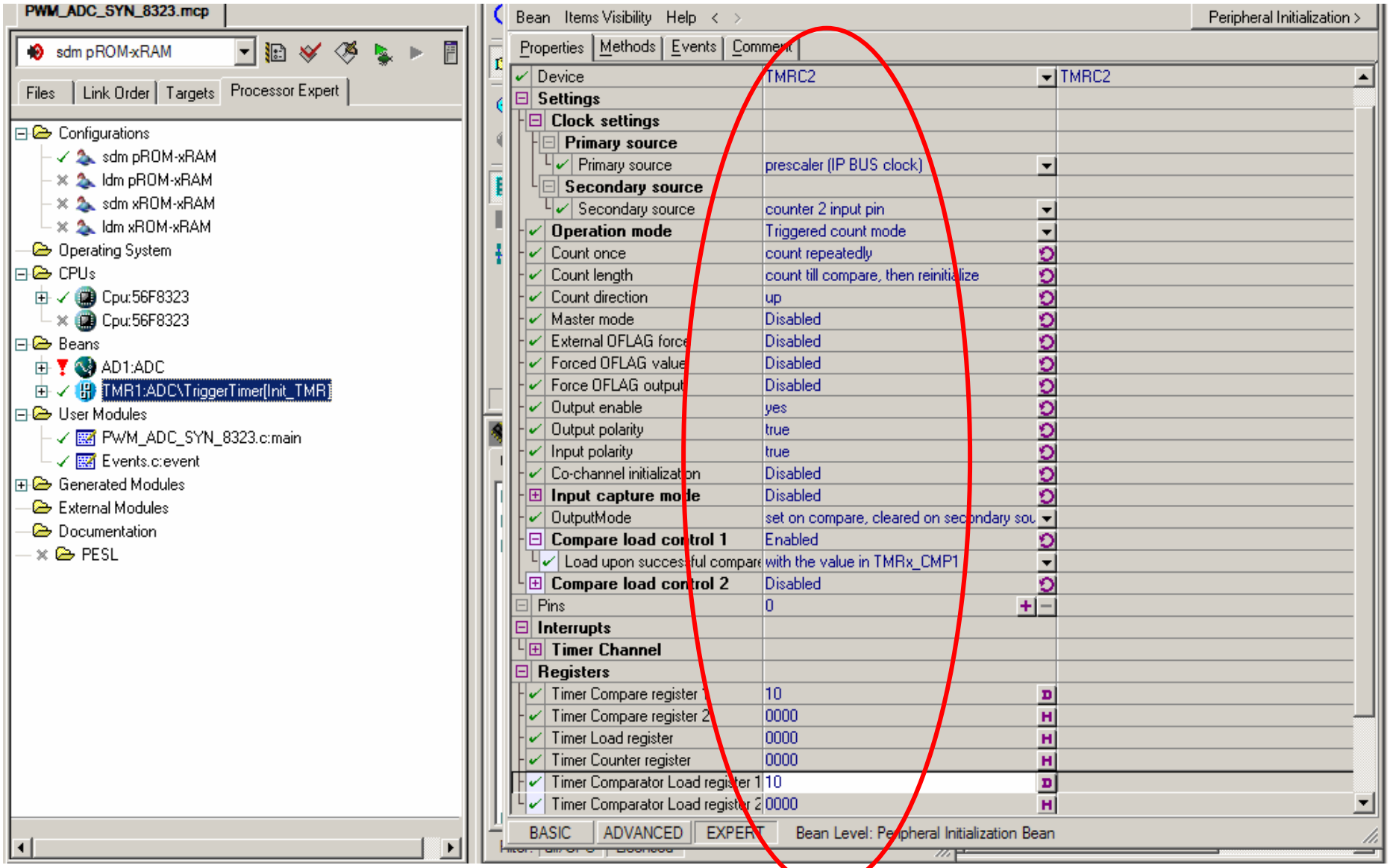


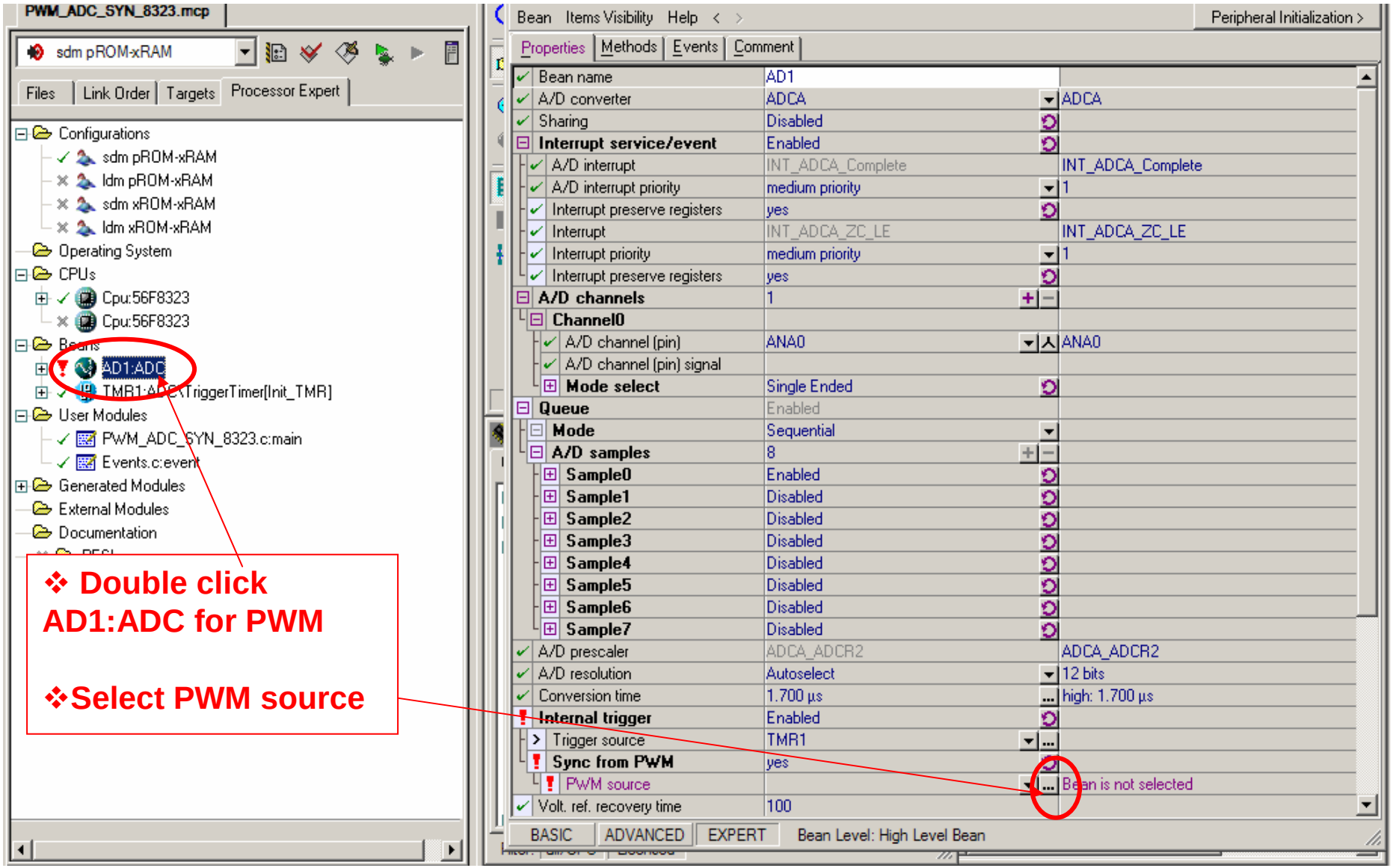


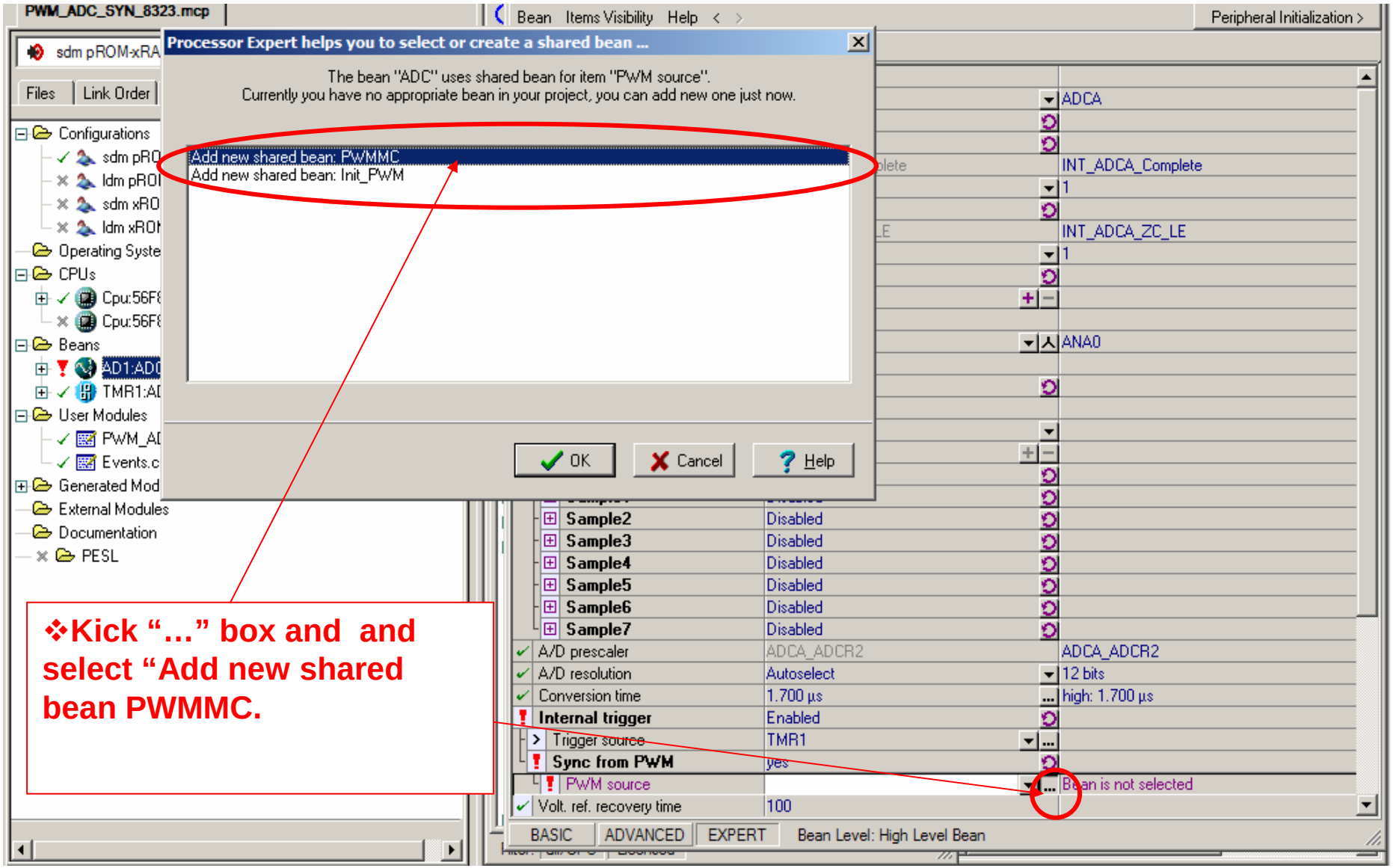




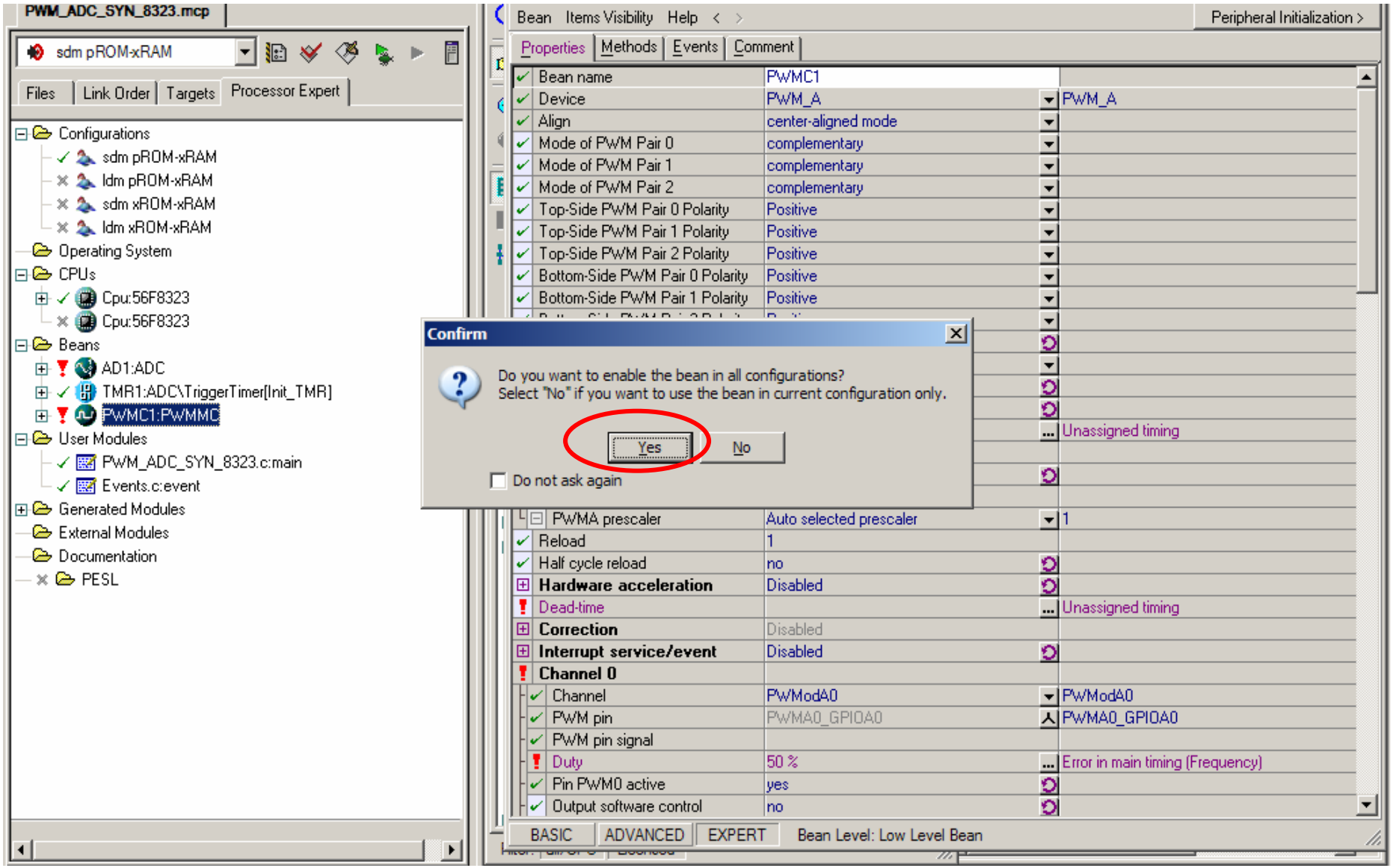


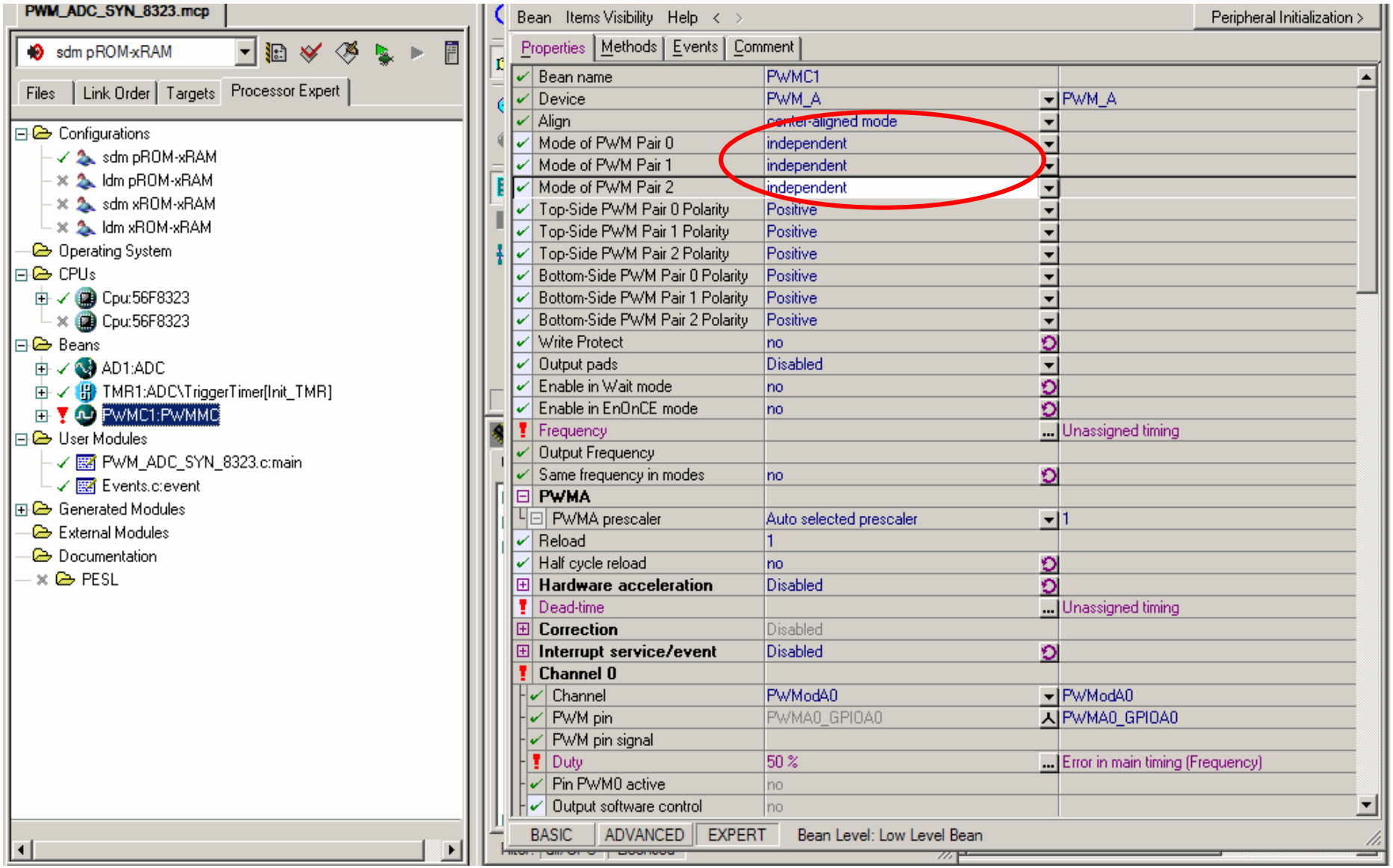


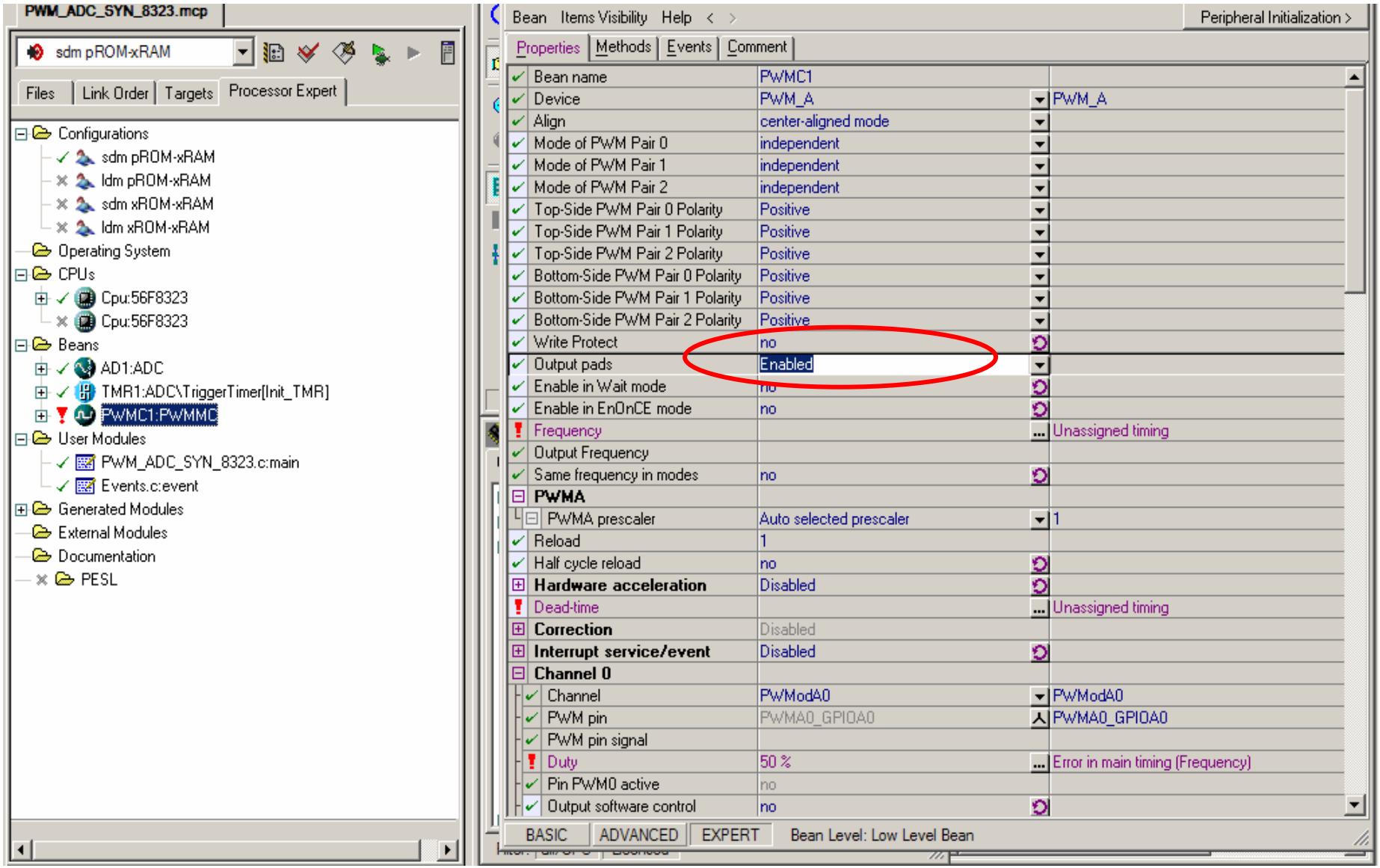


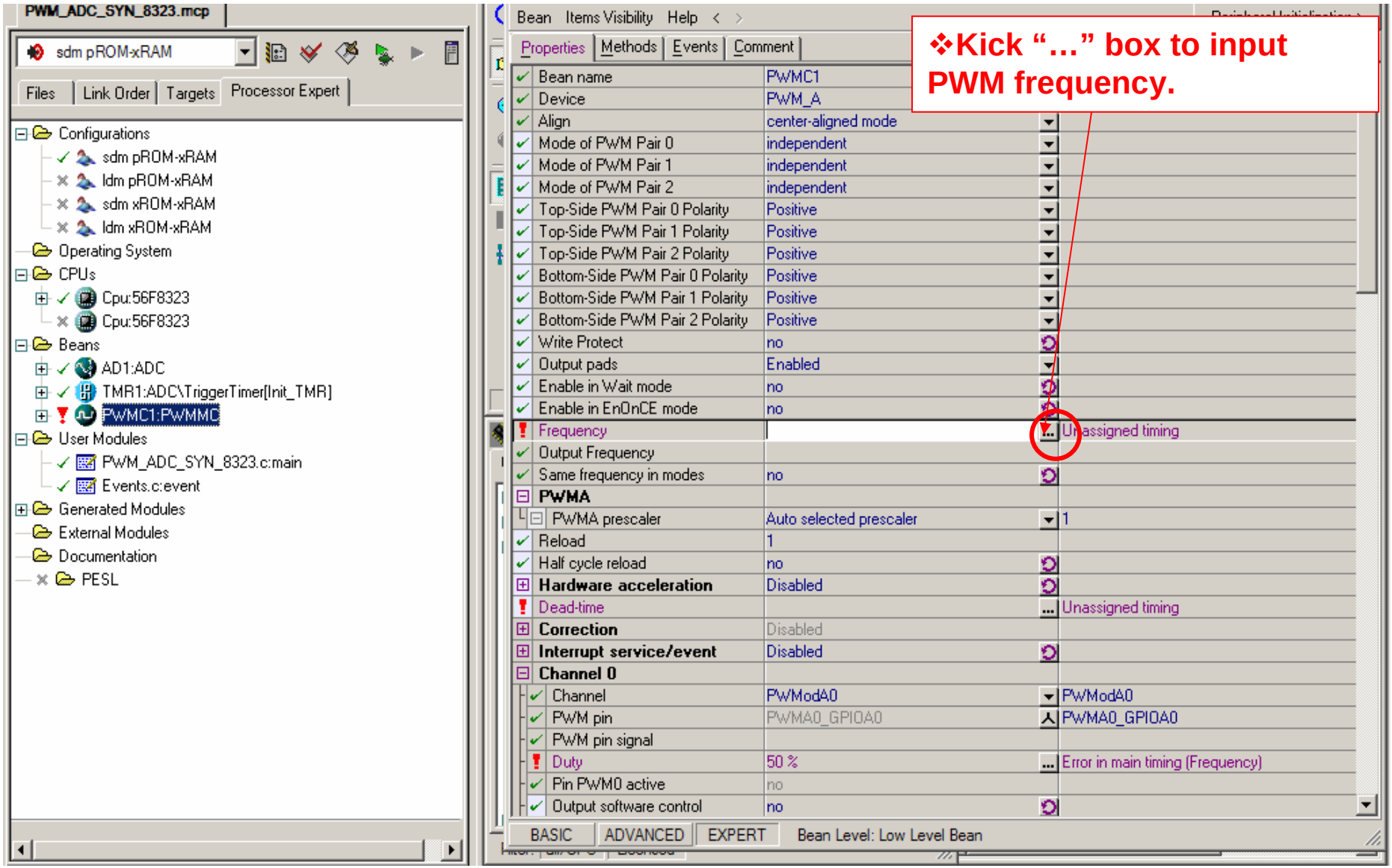


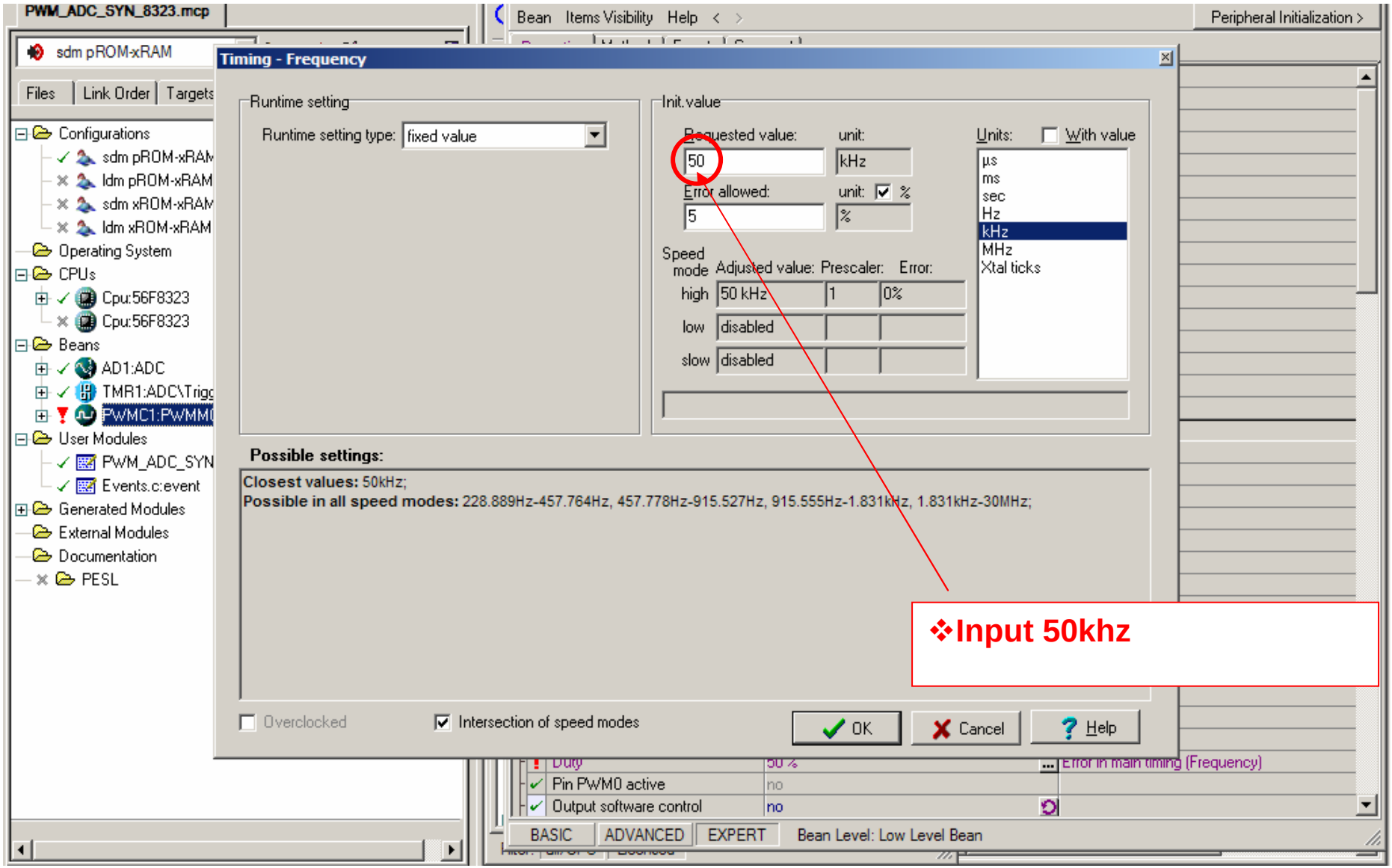
❖Kick "…" box and and select "Add new shared bean PWMMC.



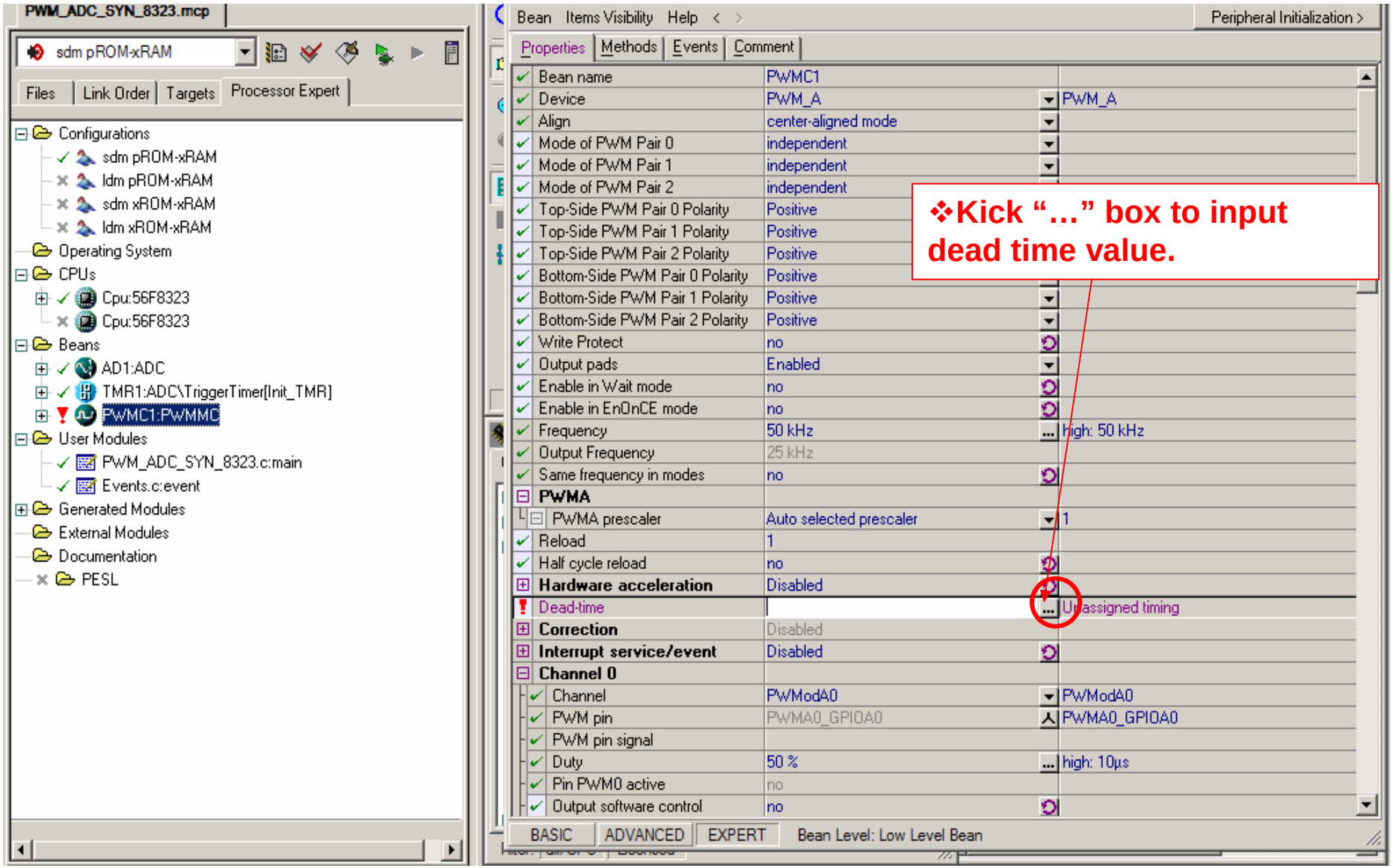


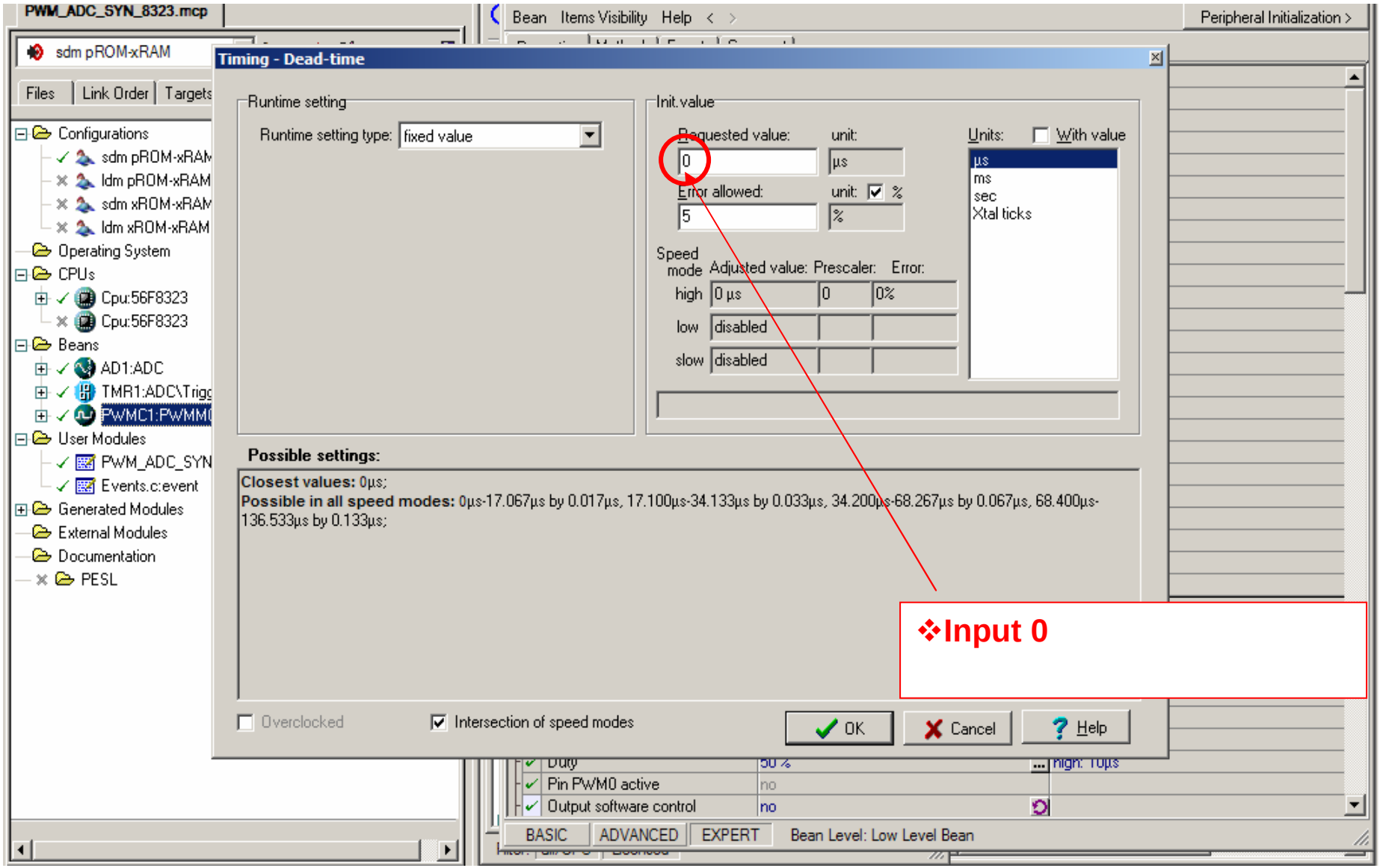


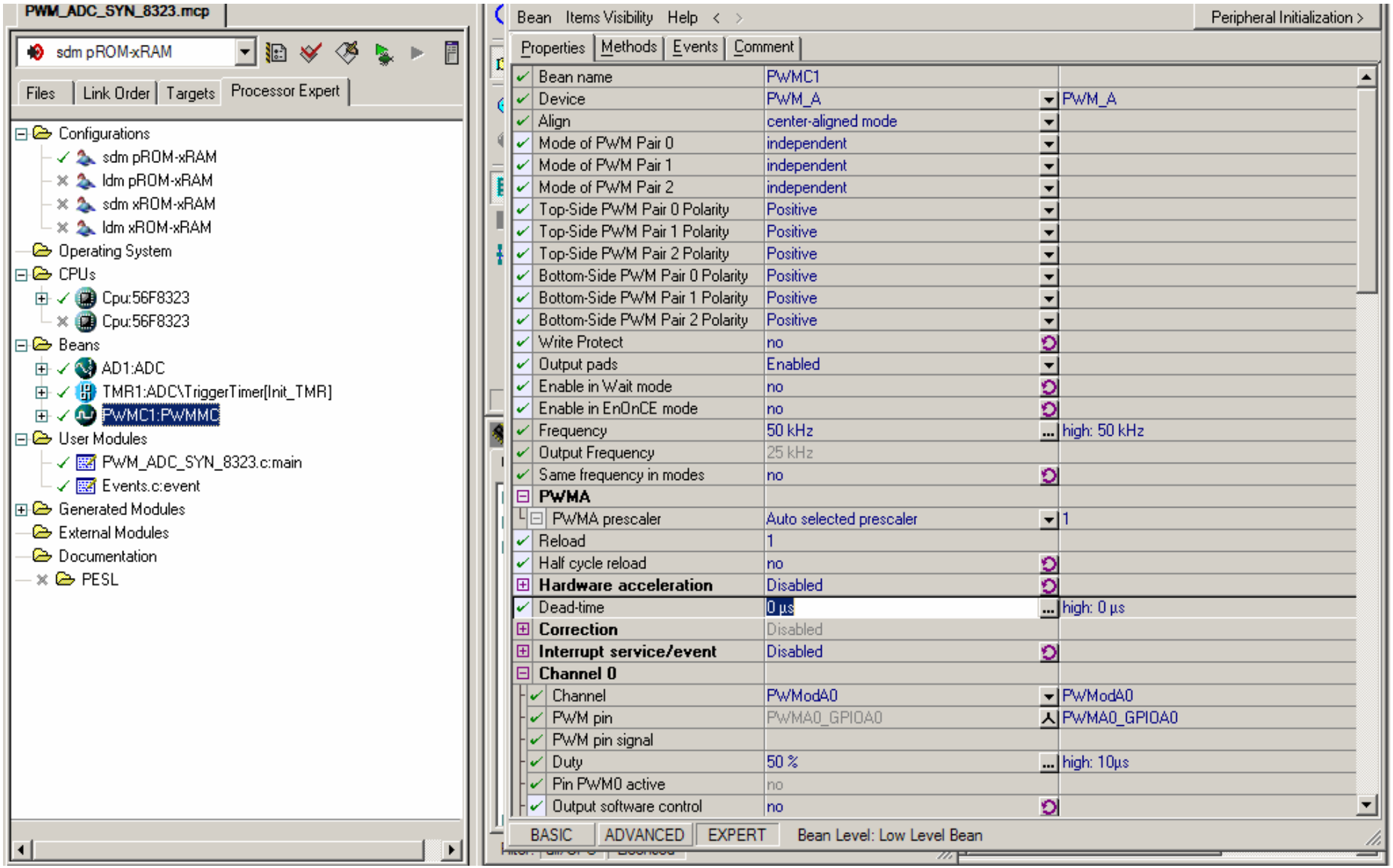


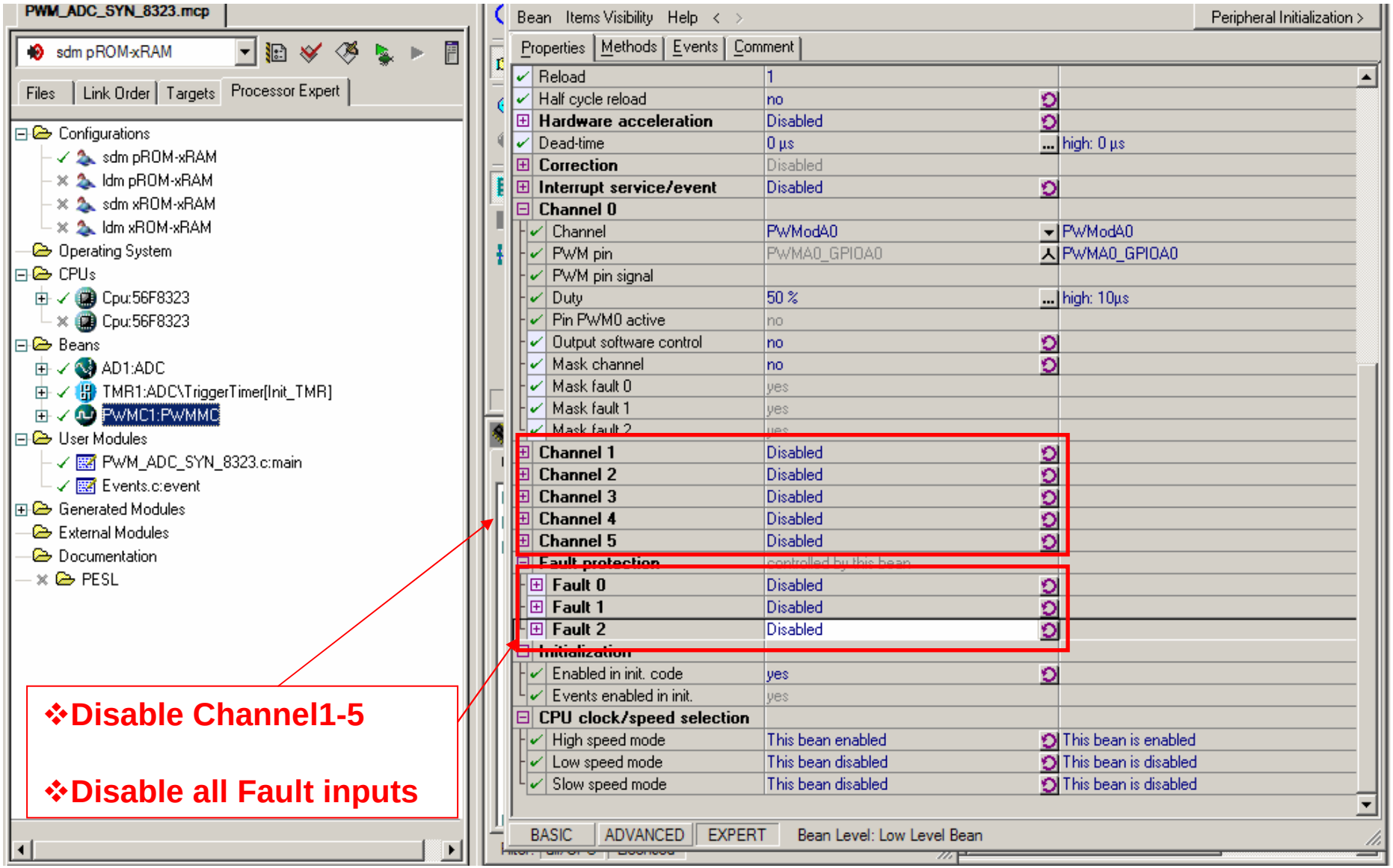


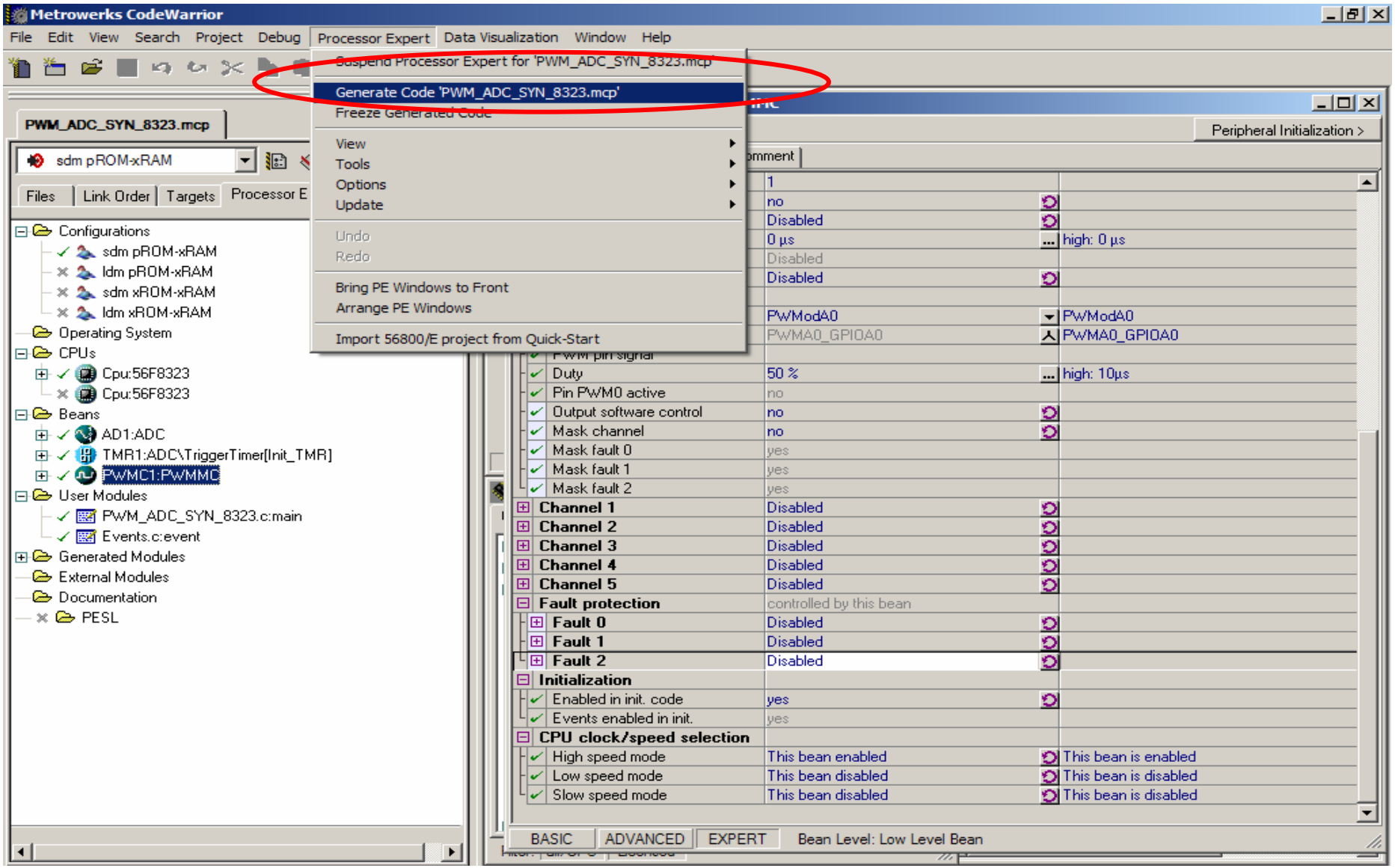
❖Input 50khz

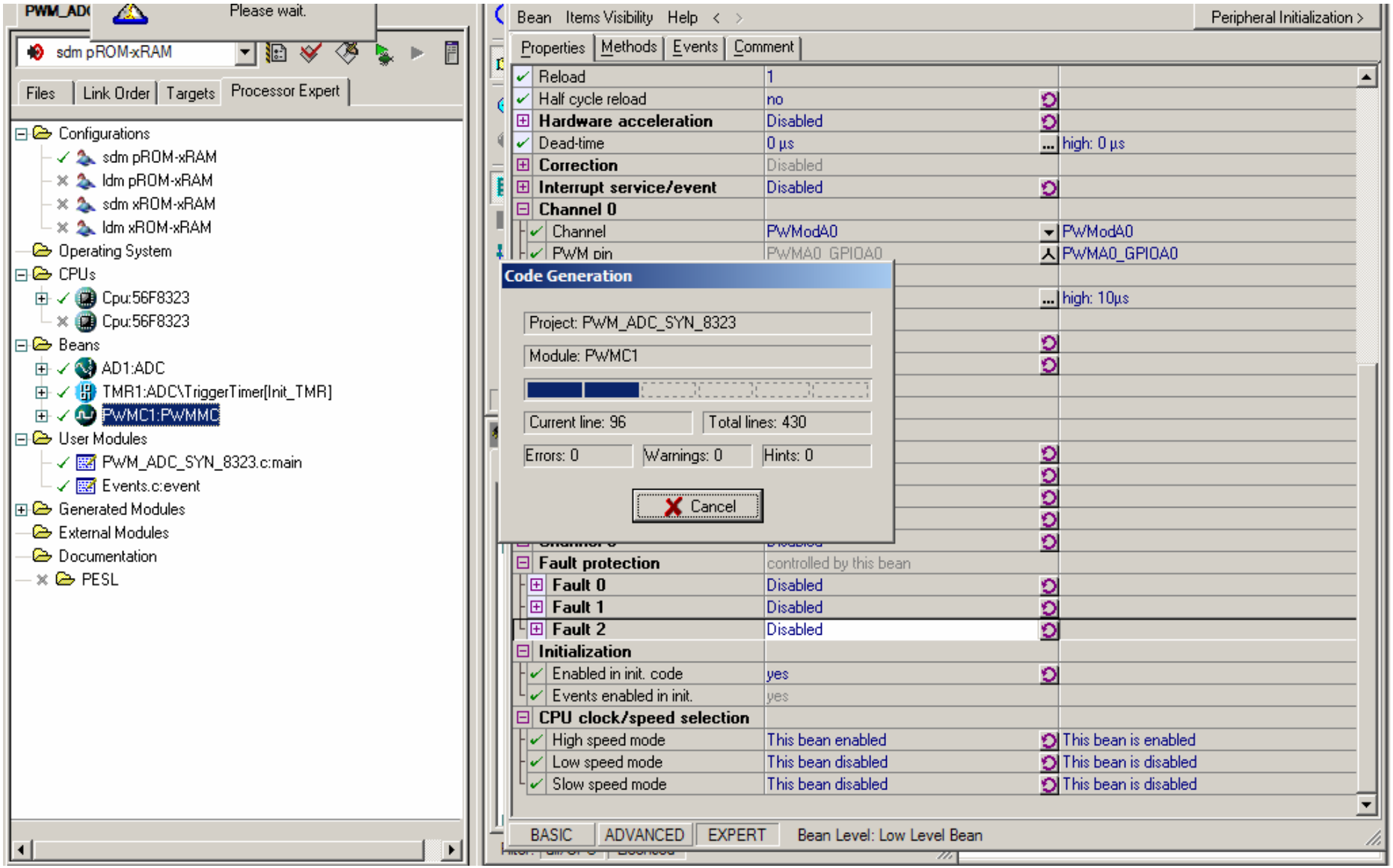


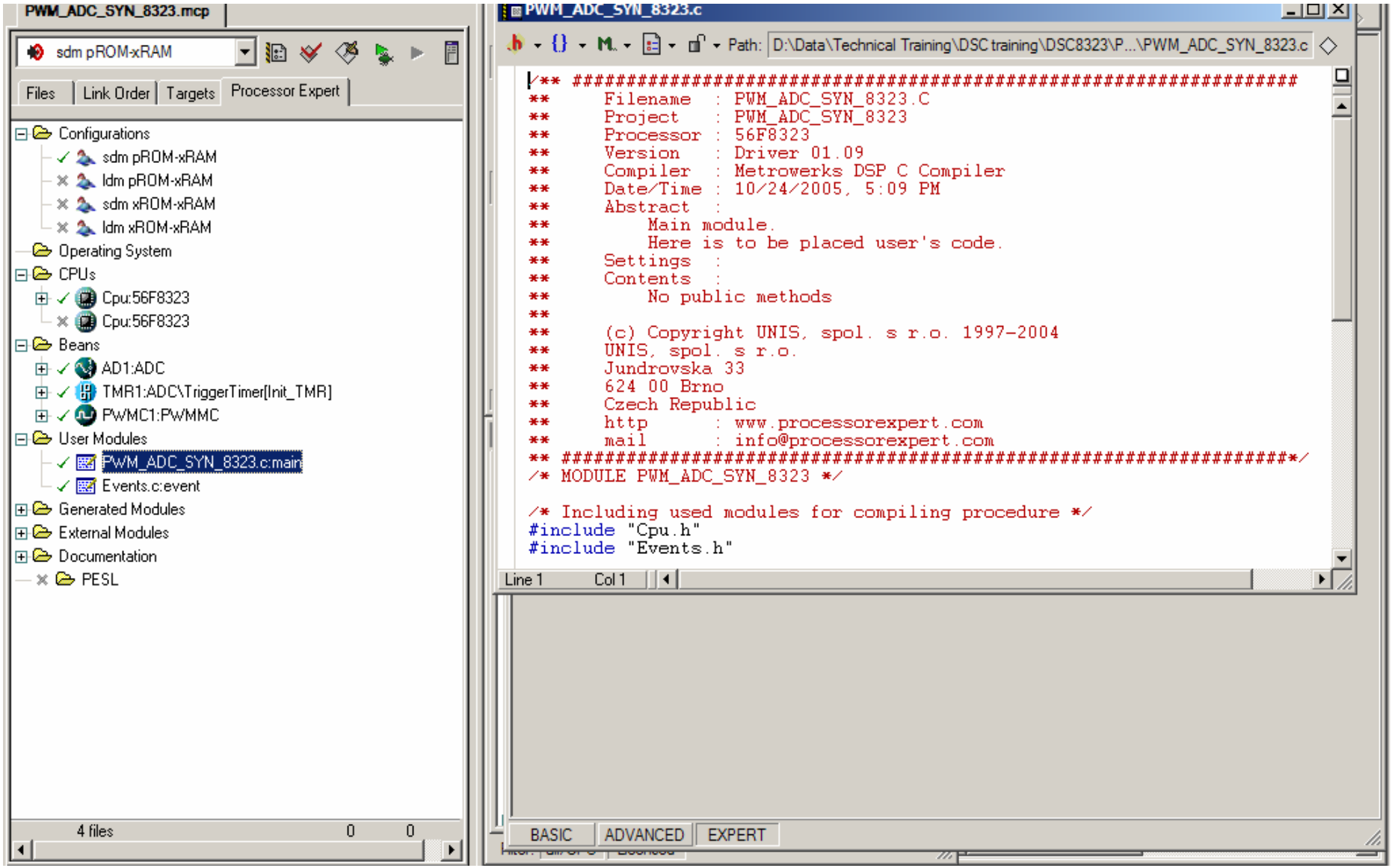


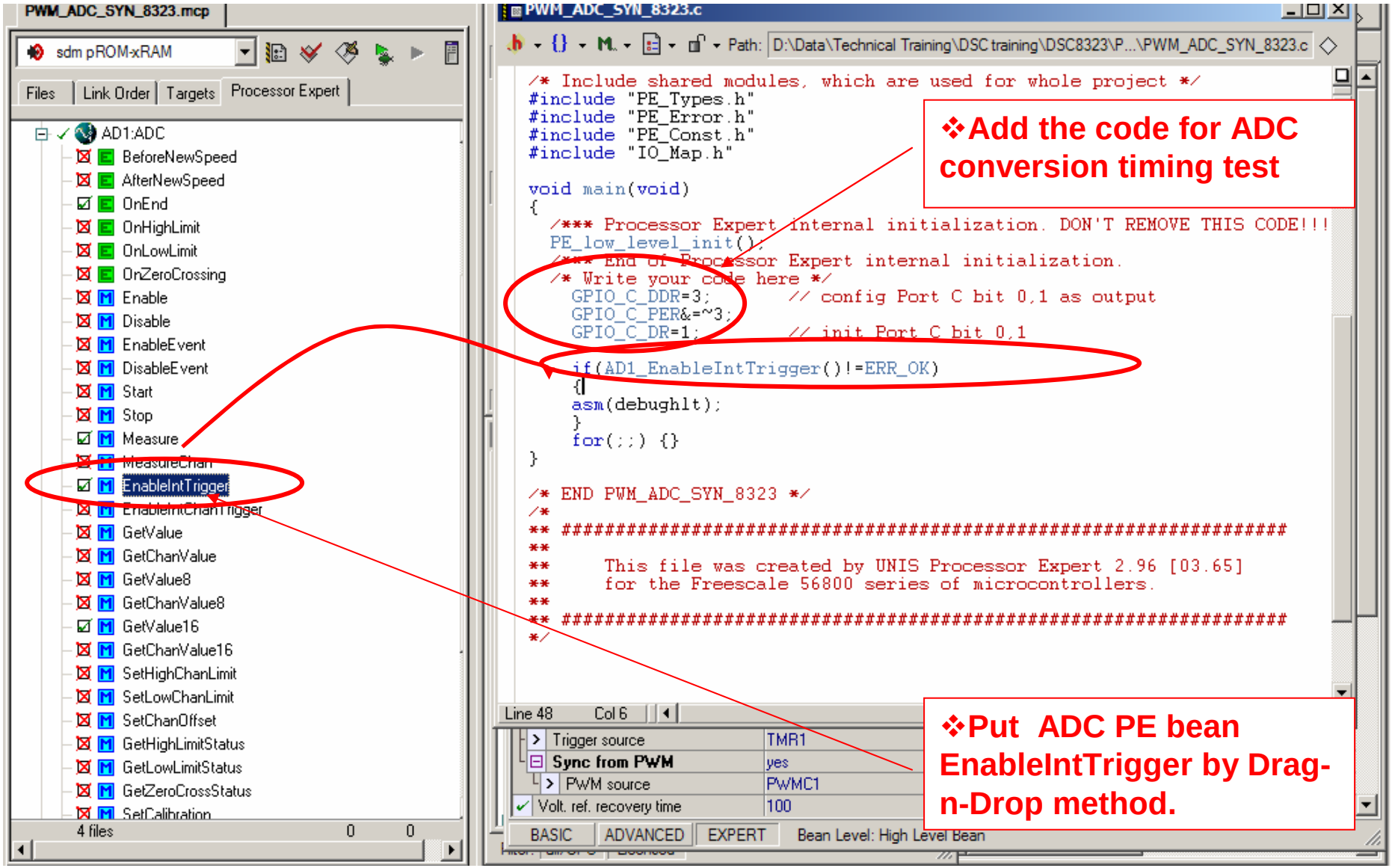


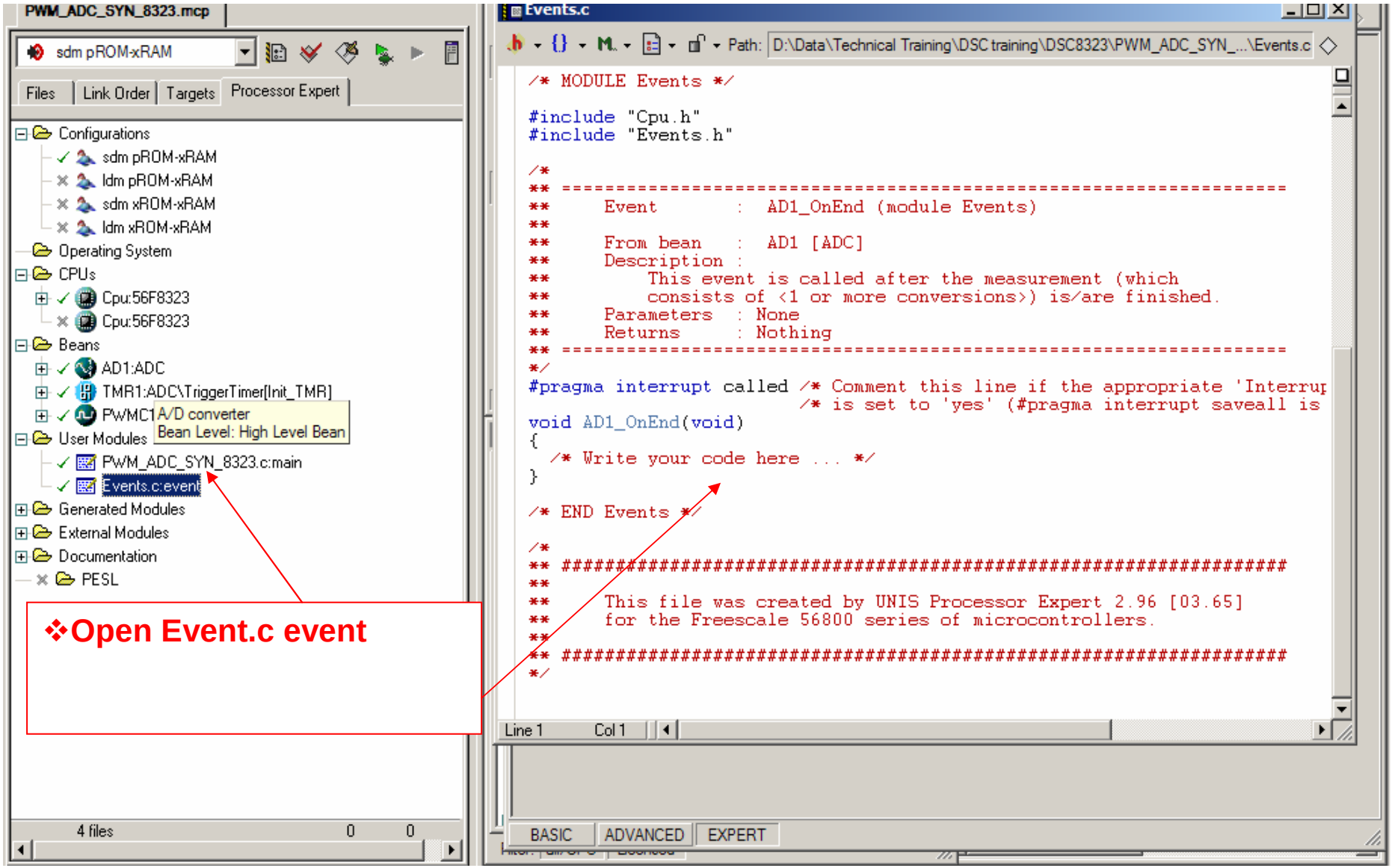


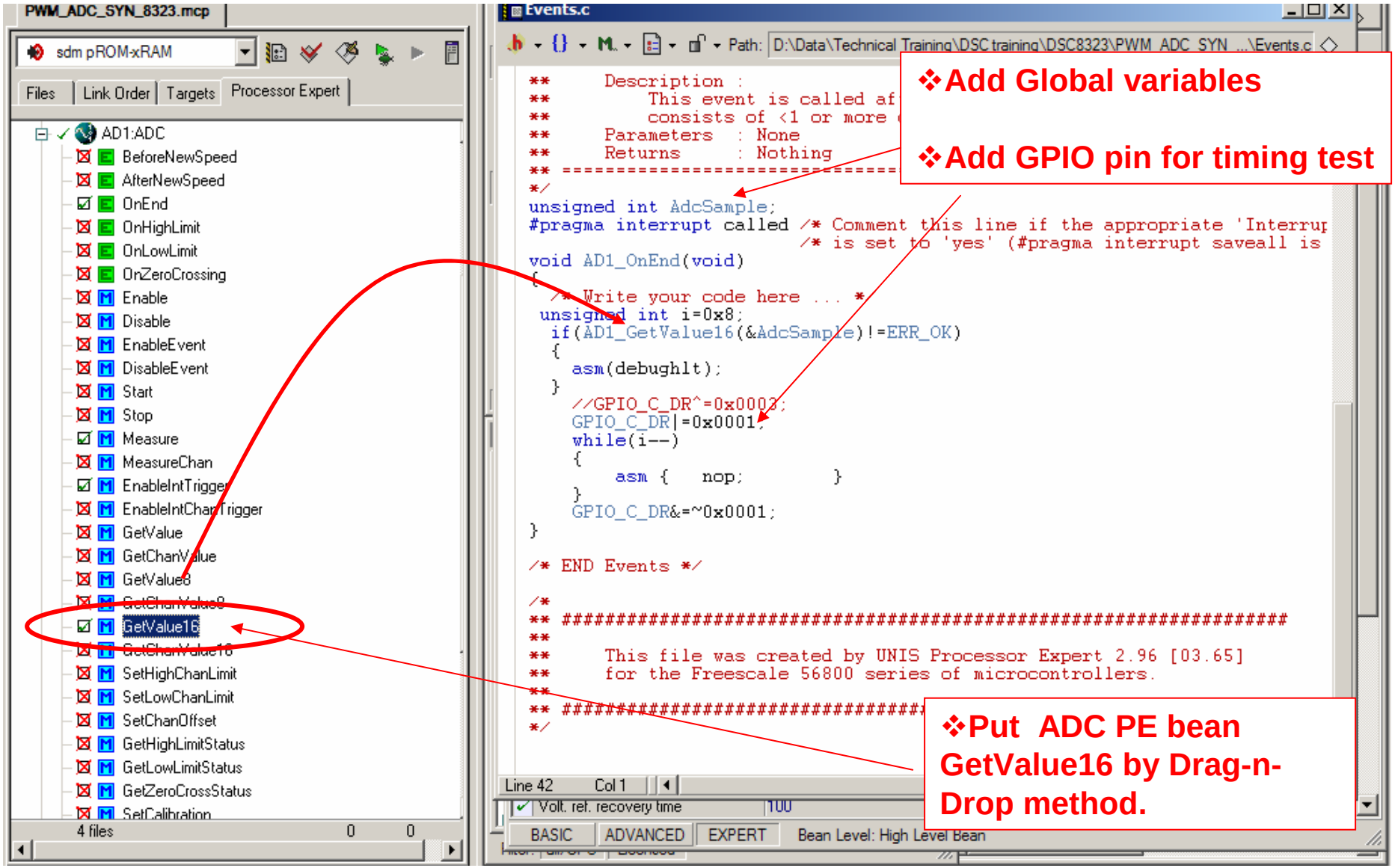


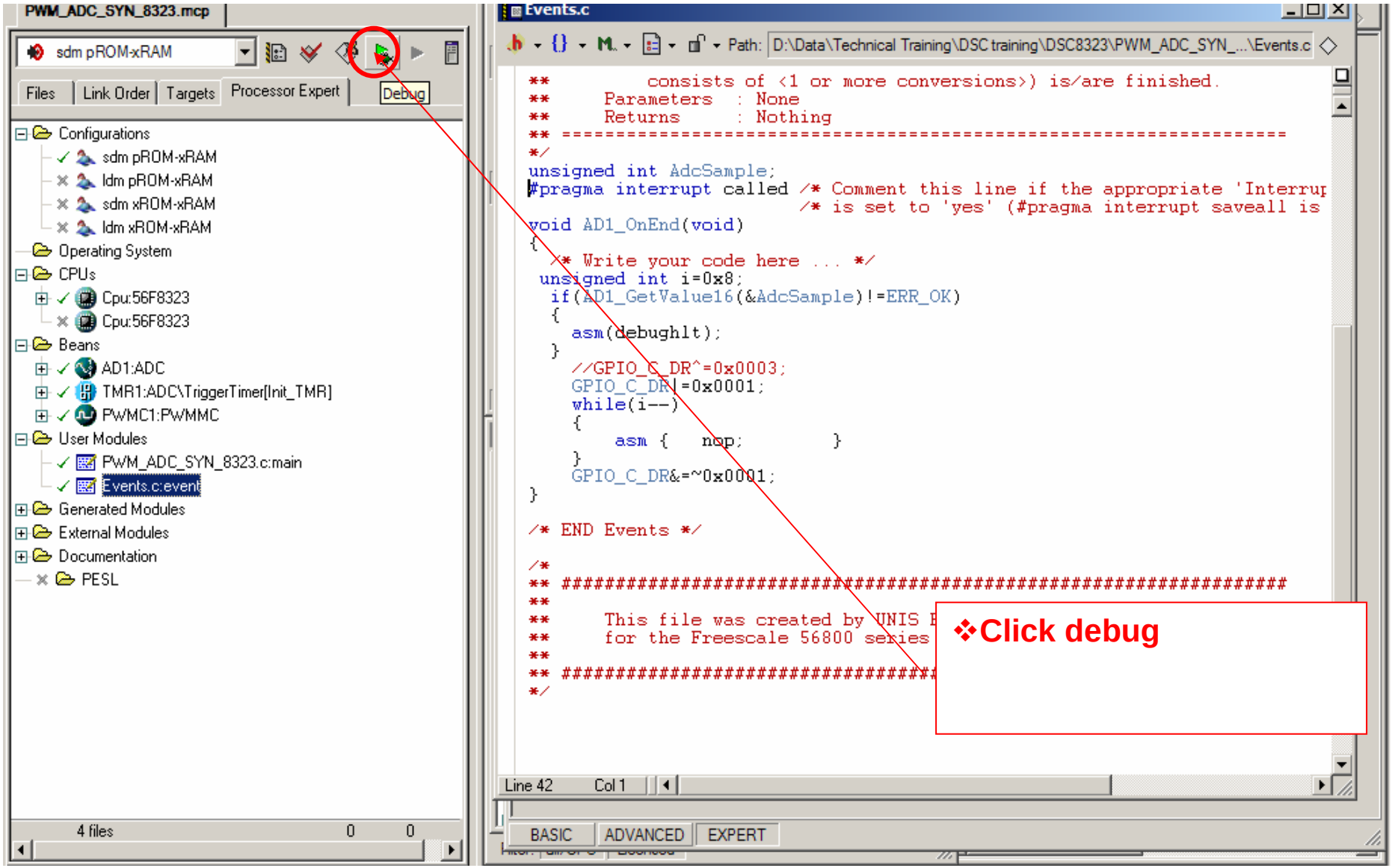


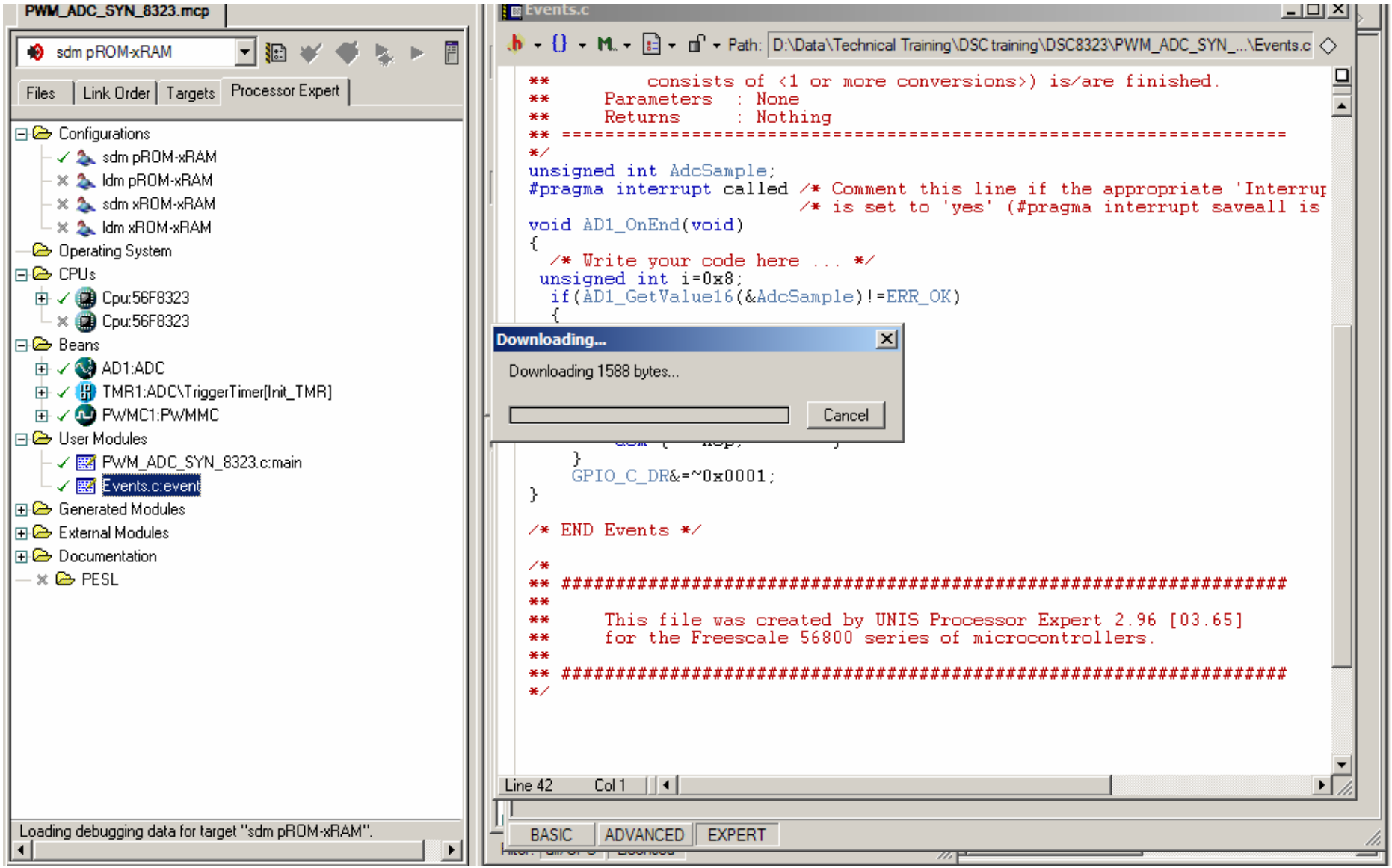


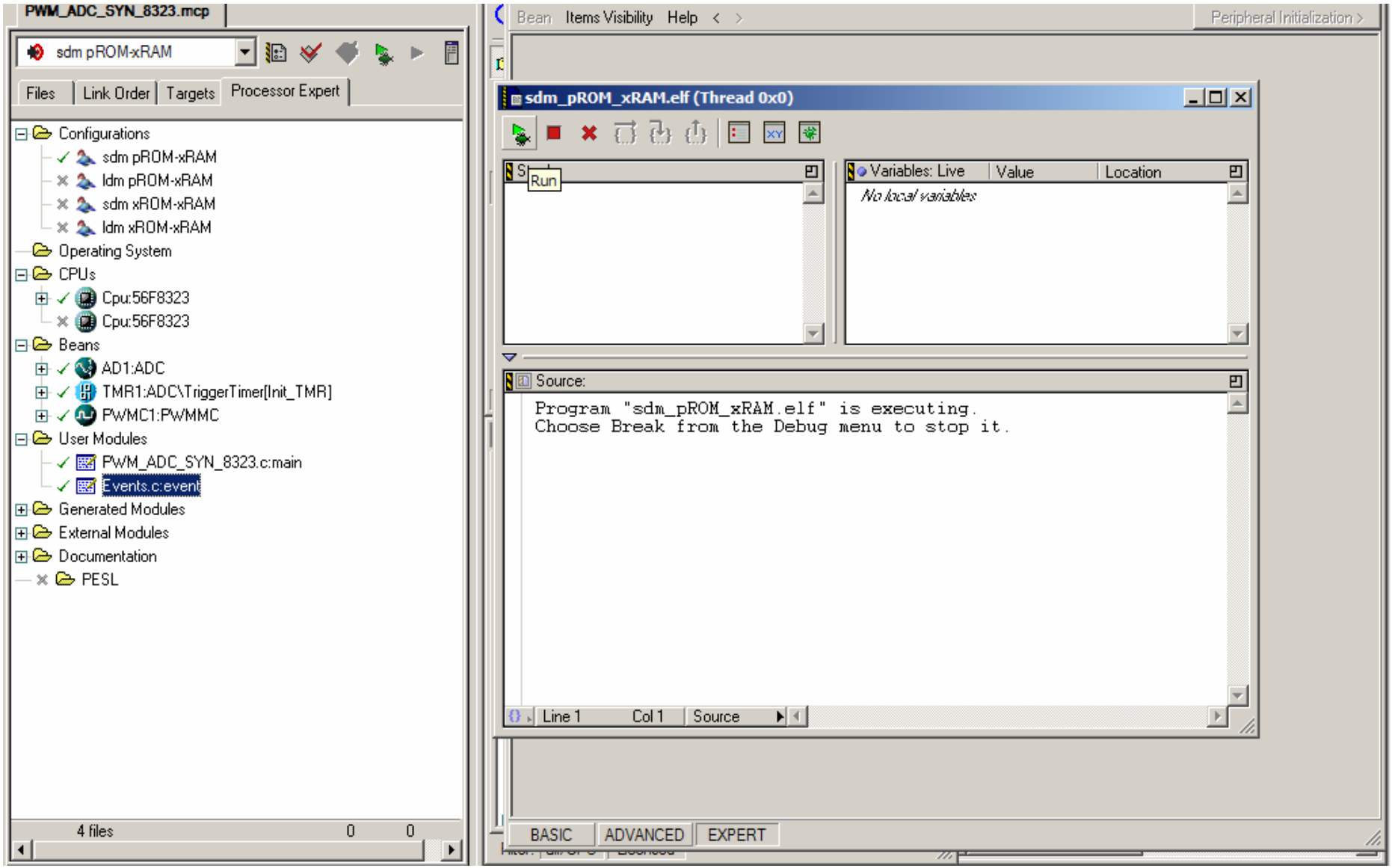




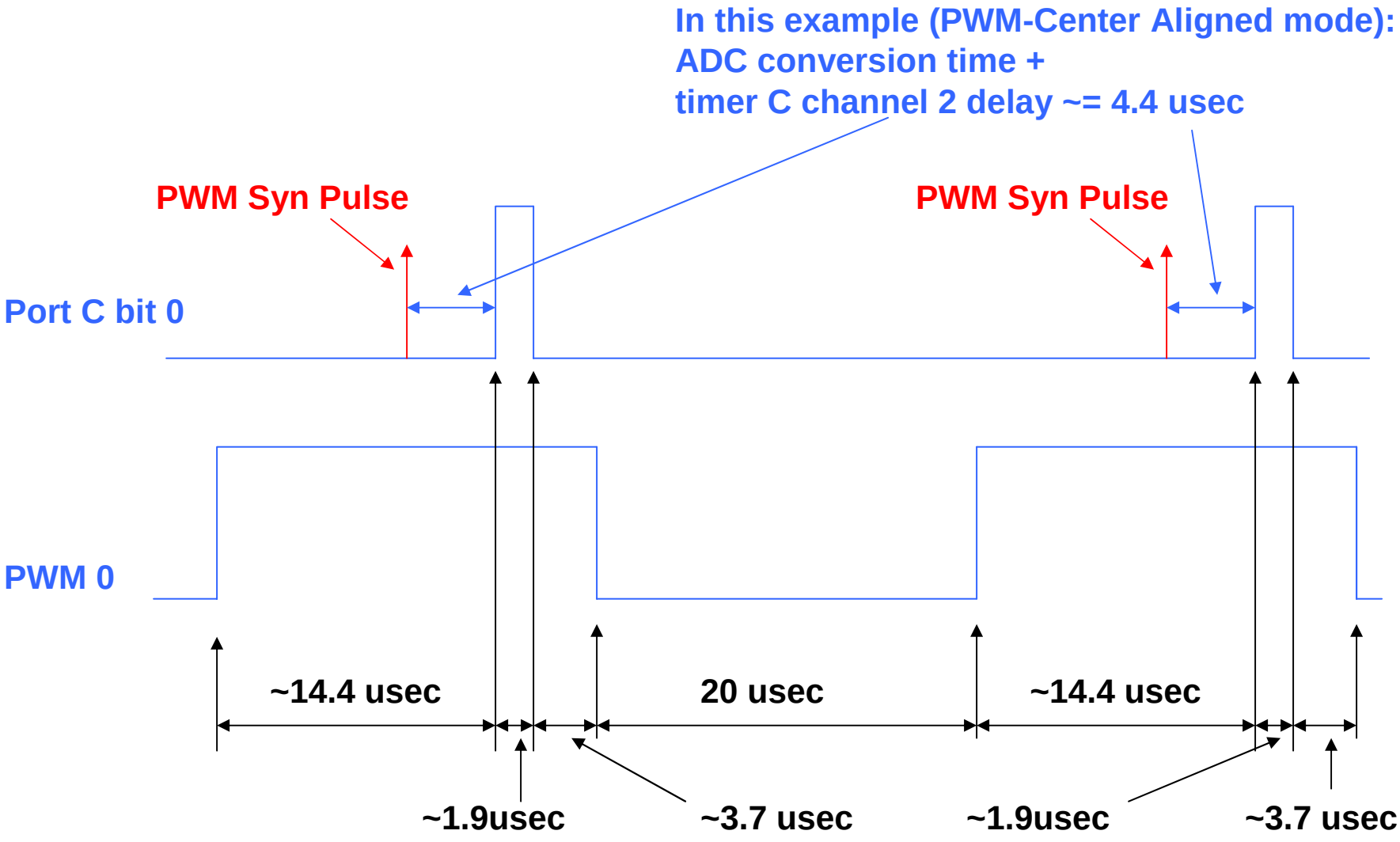


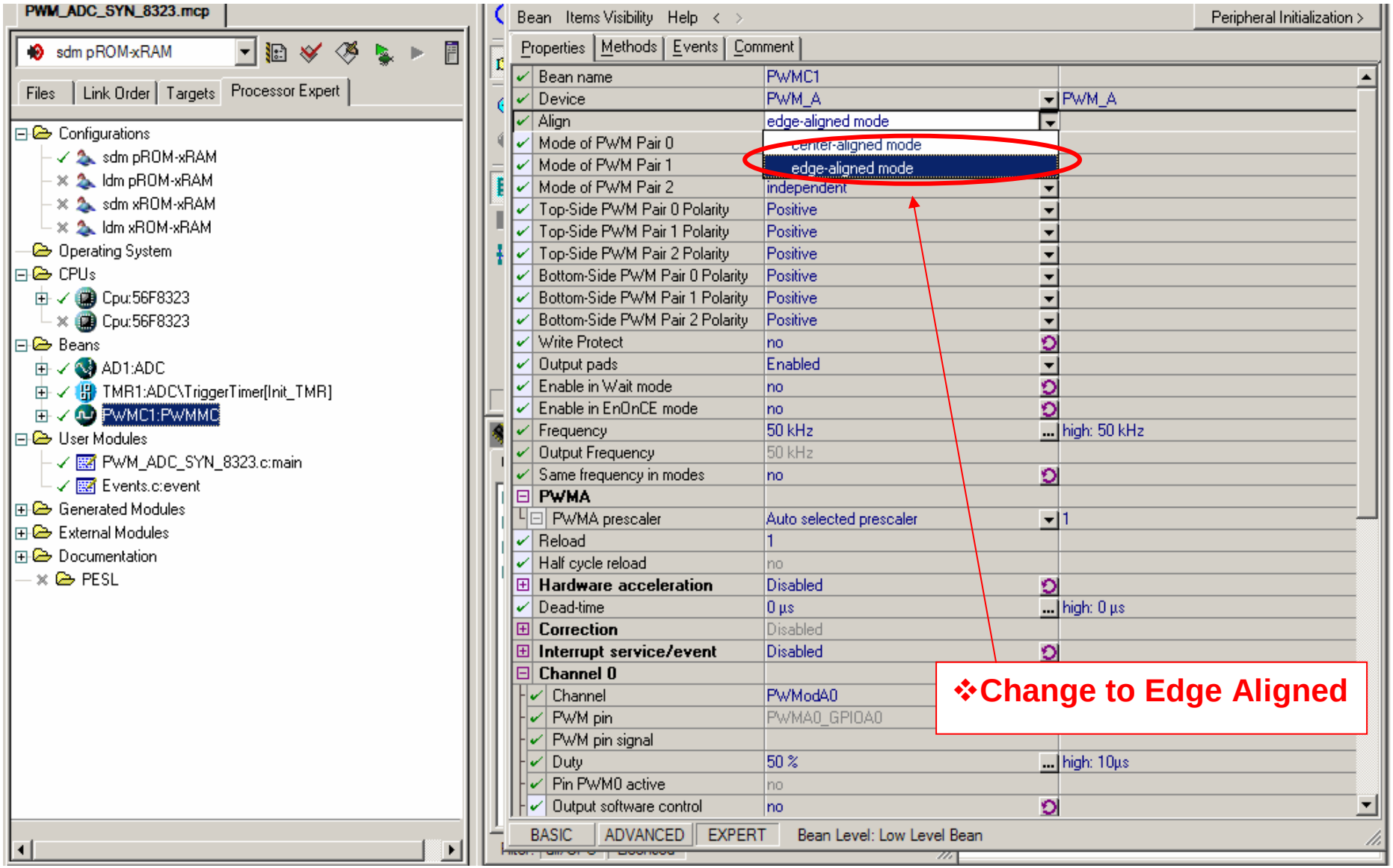


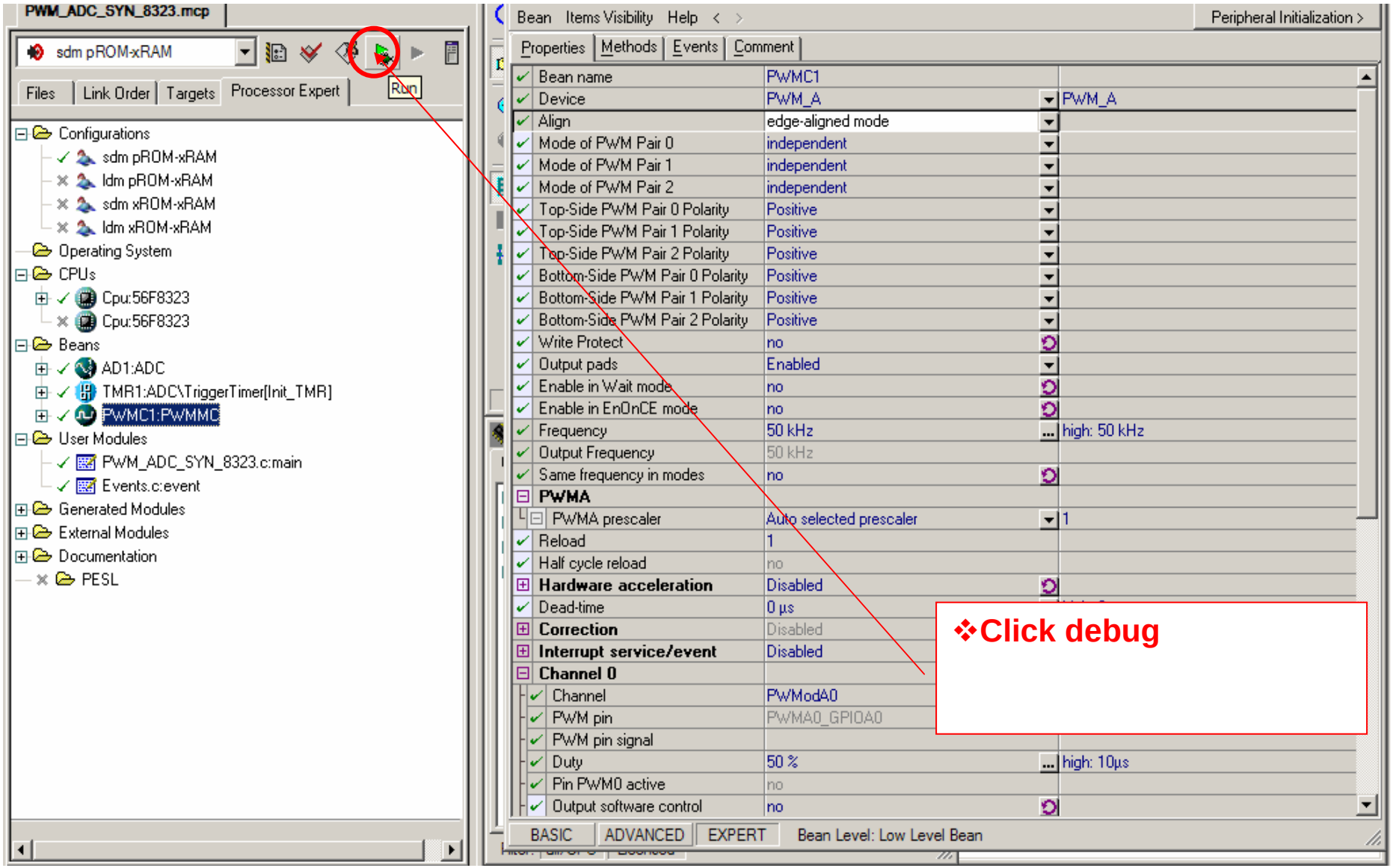


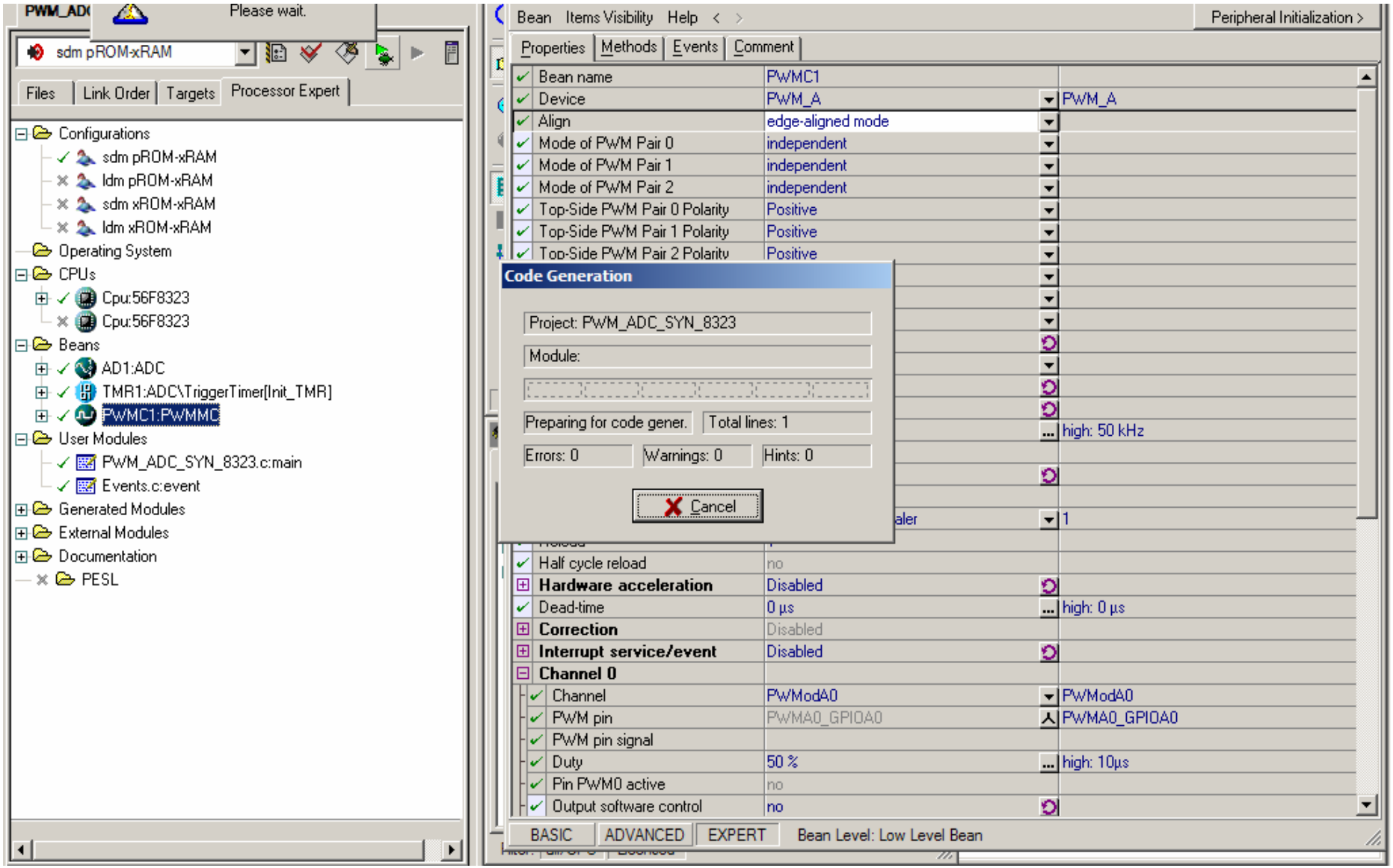


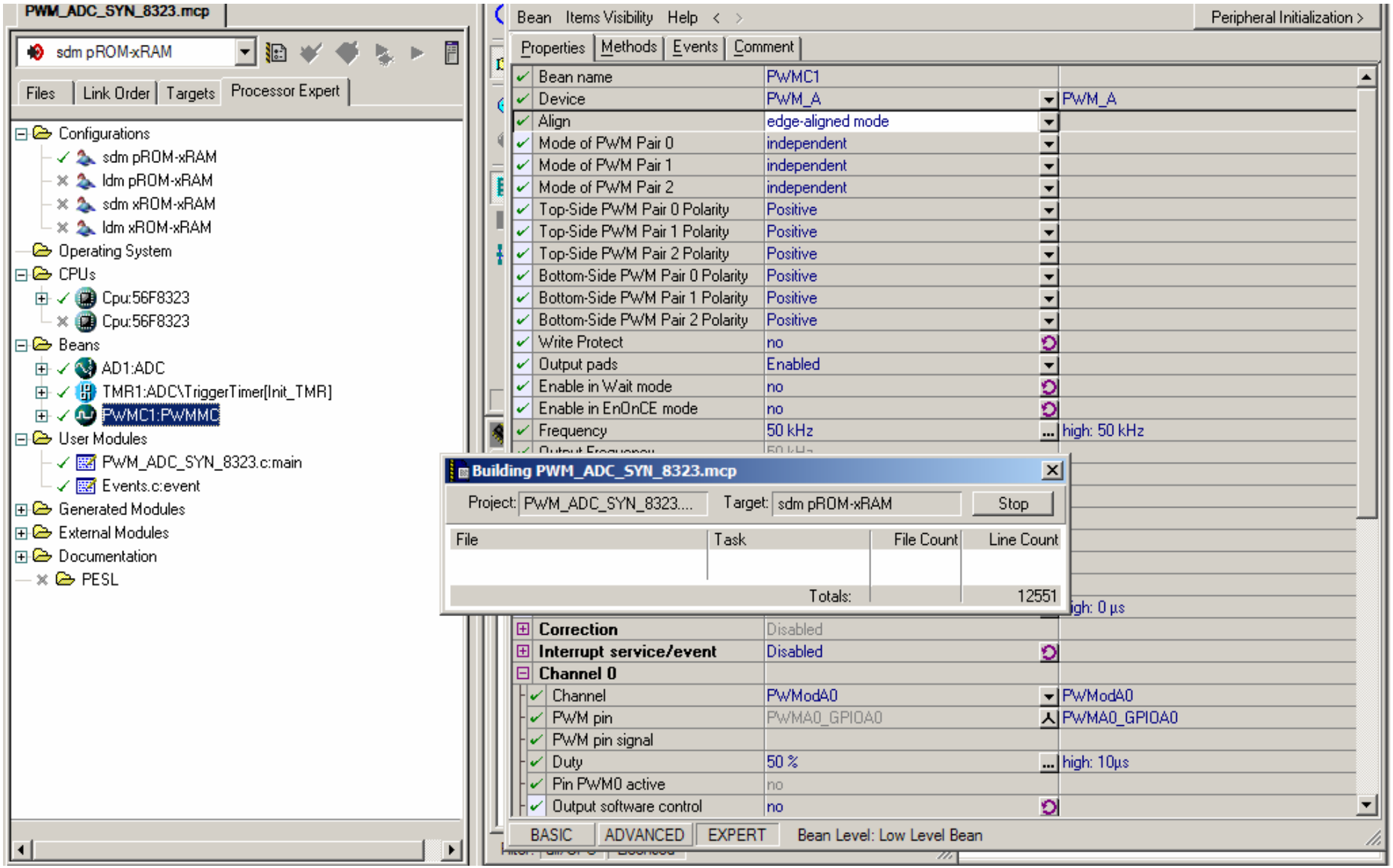
Result 1:

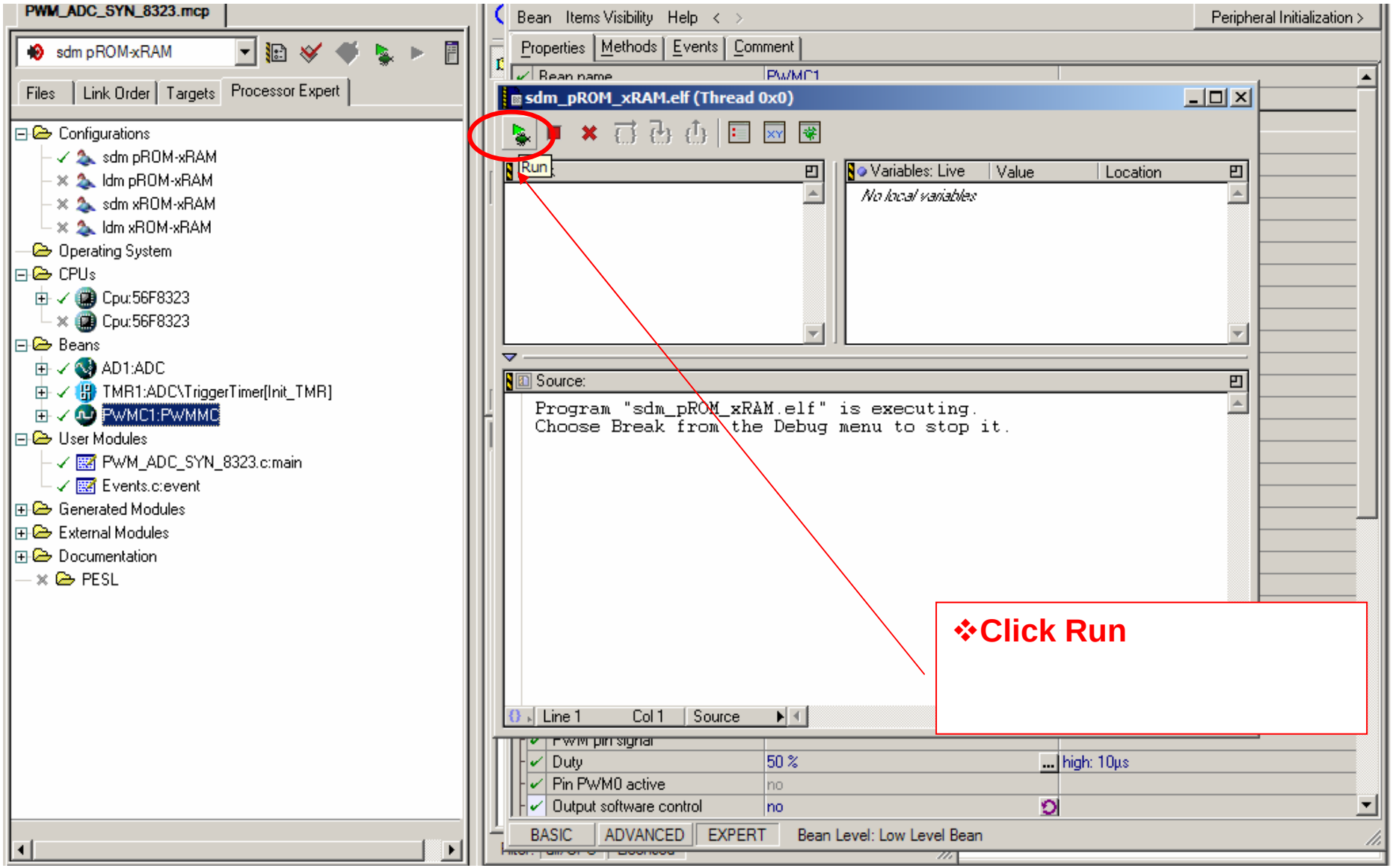






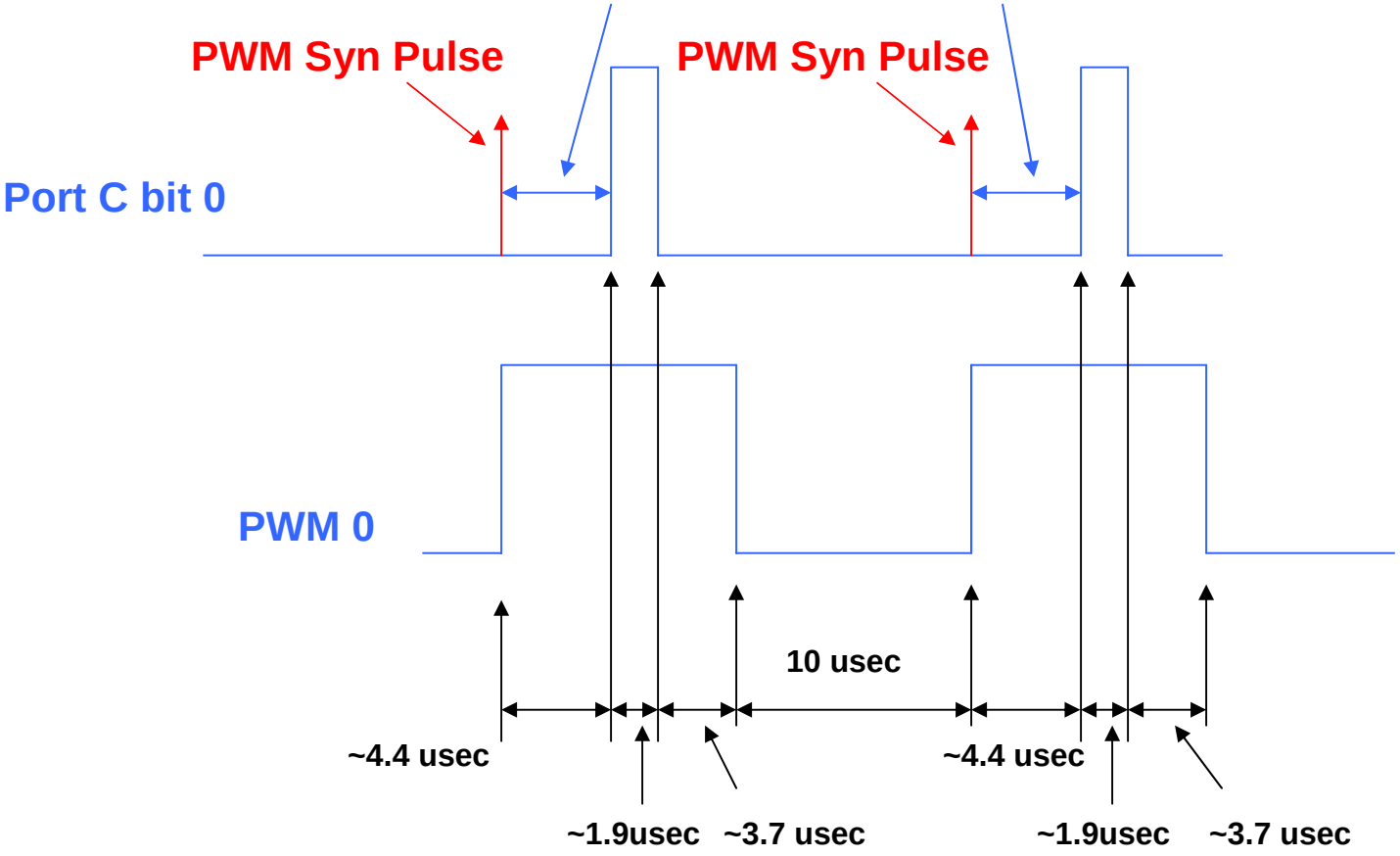






Result 2 :

In this example (PWM- Edge Aligned mode):
ADC conversion time +
timer C channel 2 delay ~= 4.4 usec



Summary

Summary

- Understand the hardware and software support available for the 56800E Hybrid Controller product line.

- Demonstrated the ease of developing applications using CodeWarrior development tools with Processor Expert™ technology for PWM_ADC_SYN conversion.

5680E





Thank You!!!