STM32CubeIDE basics

Tools – Power Consumption Calculator

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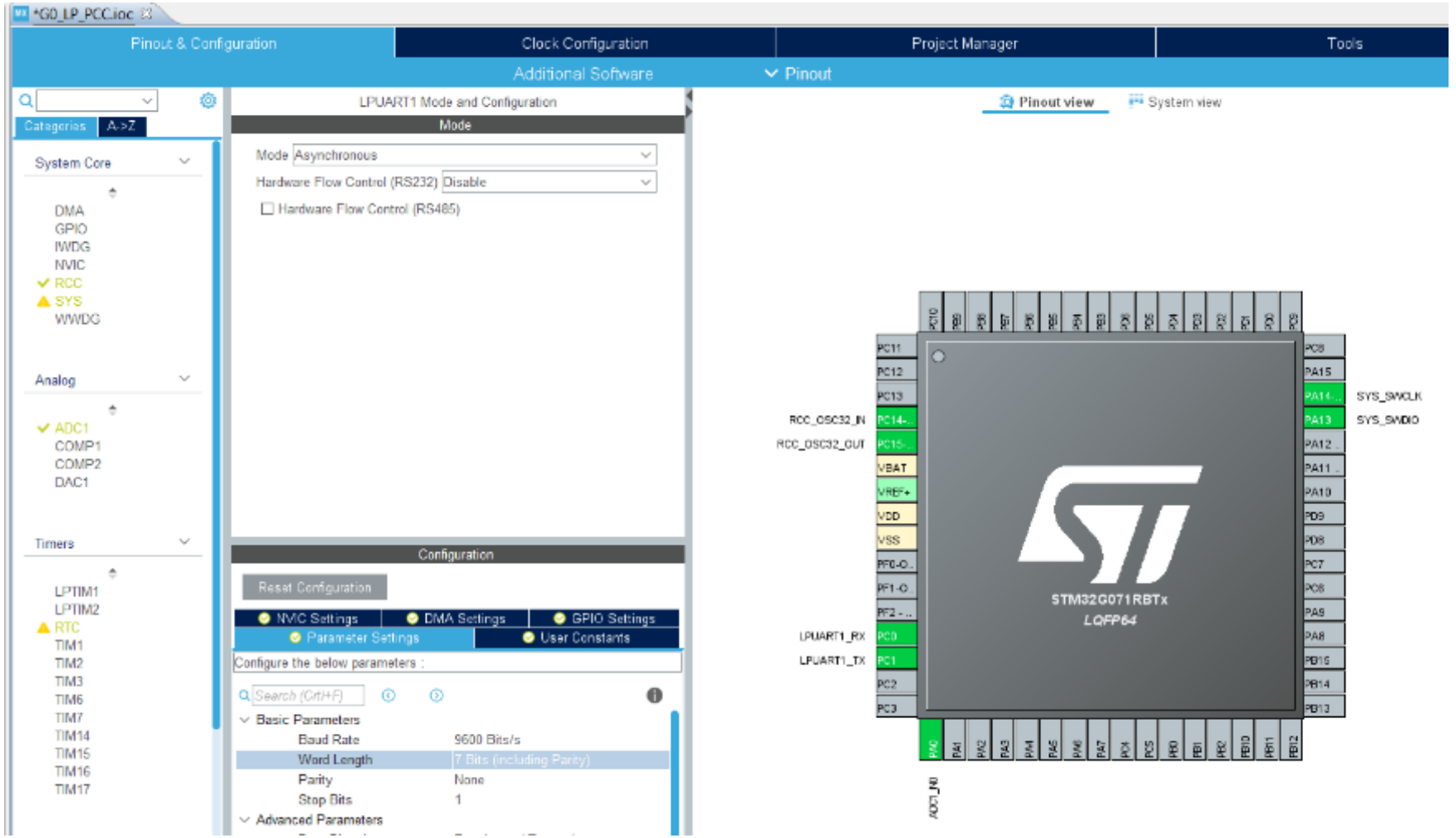
PCC – demo

- Let's create a new project and enable: LSE crystal, SWD, LPUART (9600bps), ADC1 channel1, RTC autowakeup option



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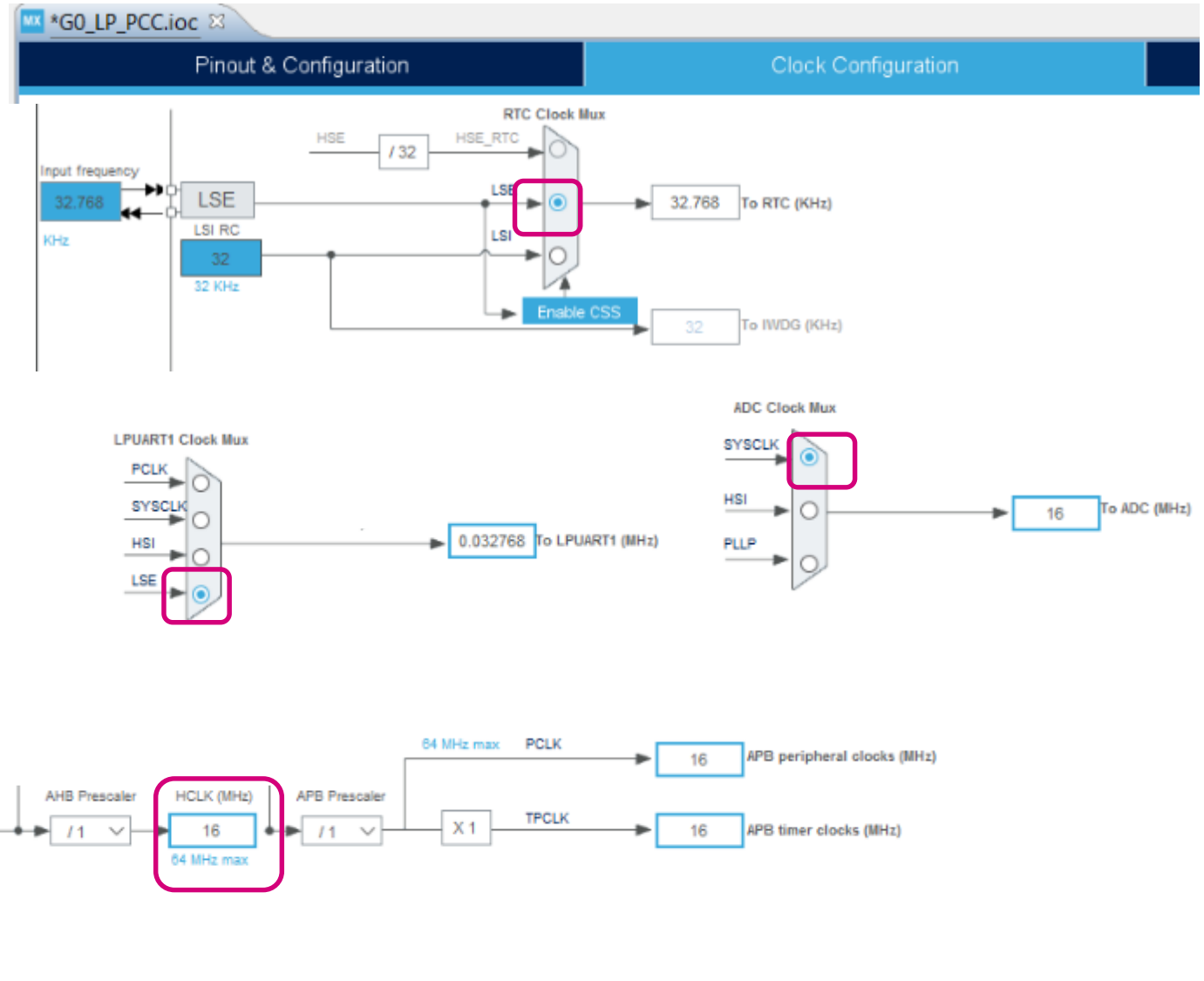
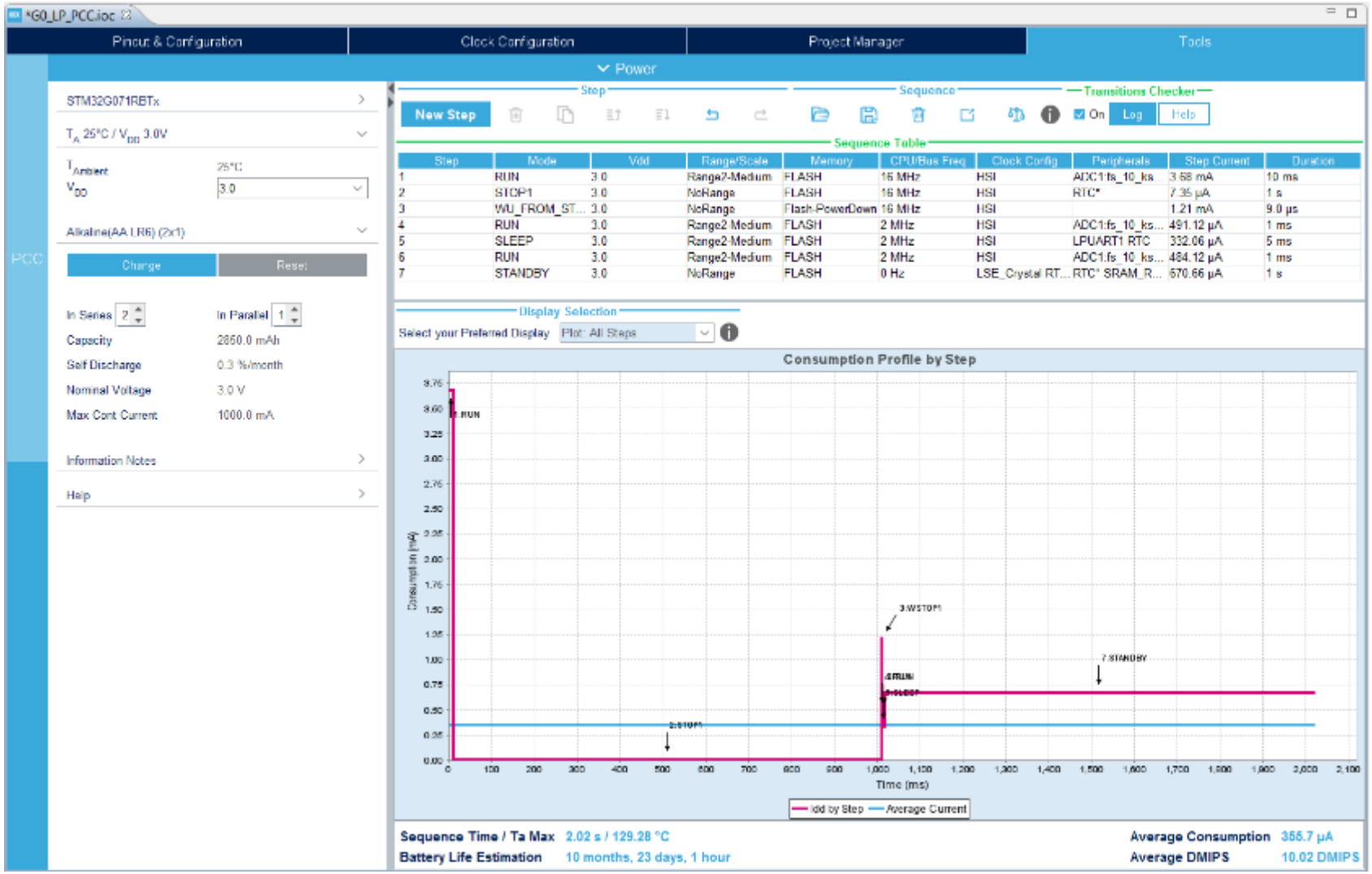
PCC – demo

- Within clock configuration:
  - Select LSE as RTC clock source
  - Use HSI 16MHz as system clock
  - Select SYSCLK as ADC clock
  - Select LSE as LPUART1 clock source



PCC – demo

- To run Power Consumption Calculator select Tools tab and then PCC



PCC

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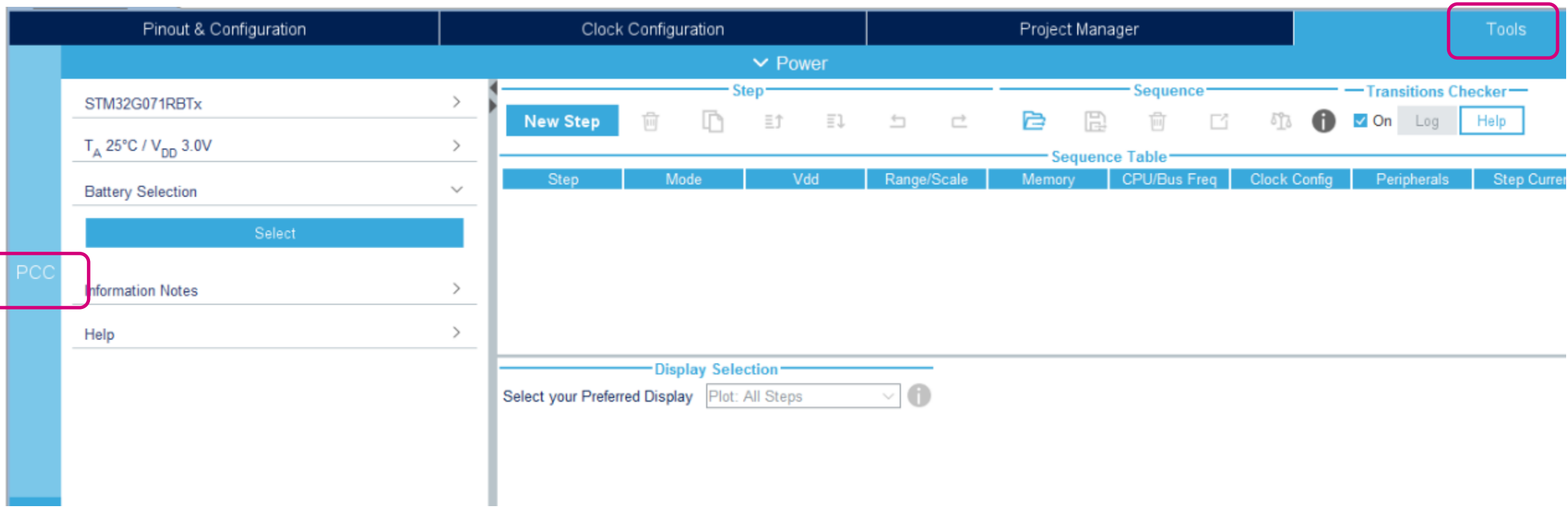
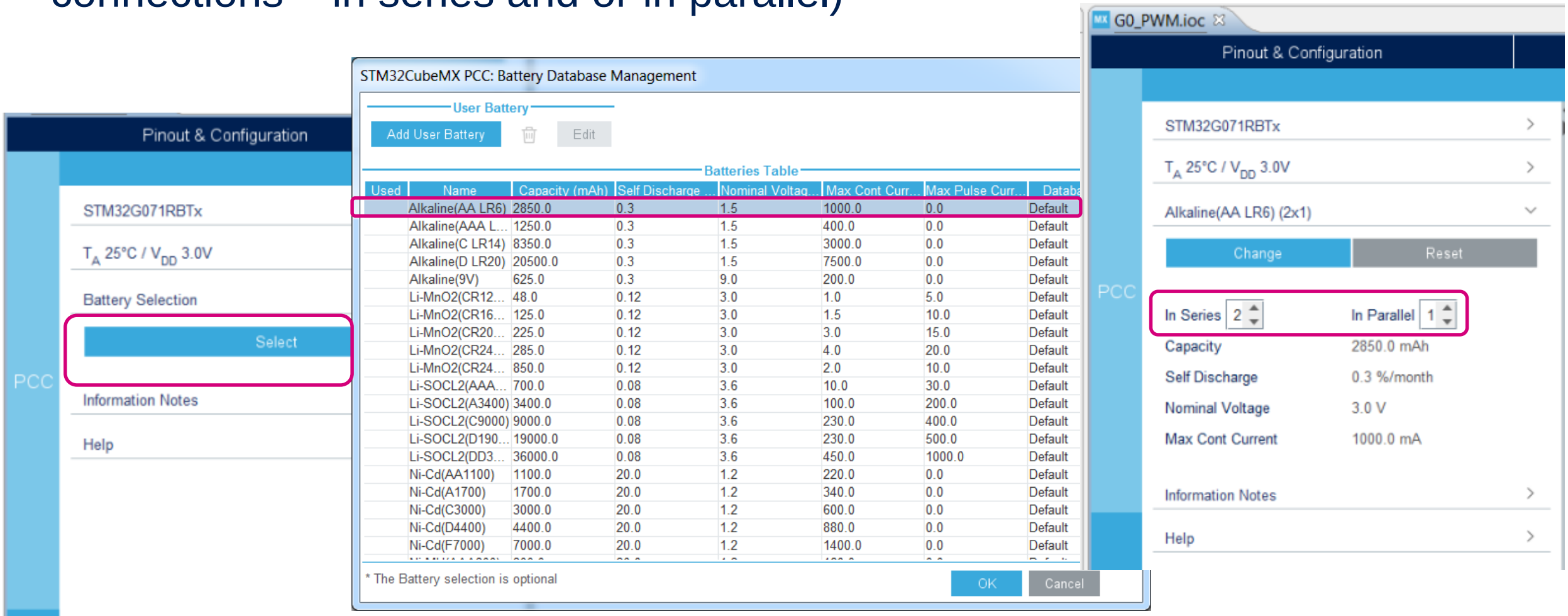


PCC

battery selection

- We can specify the battery type which would be used to power our application (it is possible to add own battery type, combine battery connections – in series and or in parallel)



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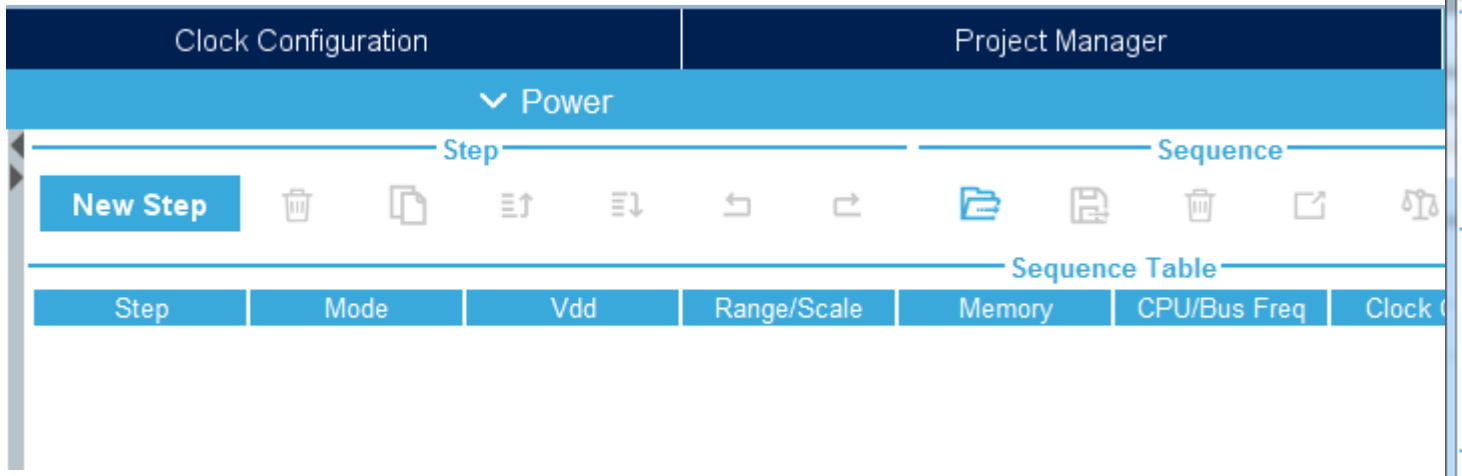
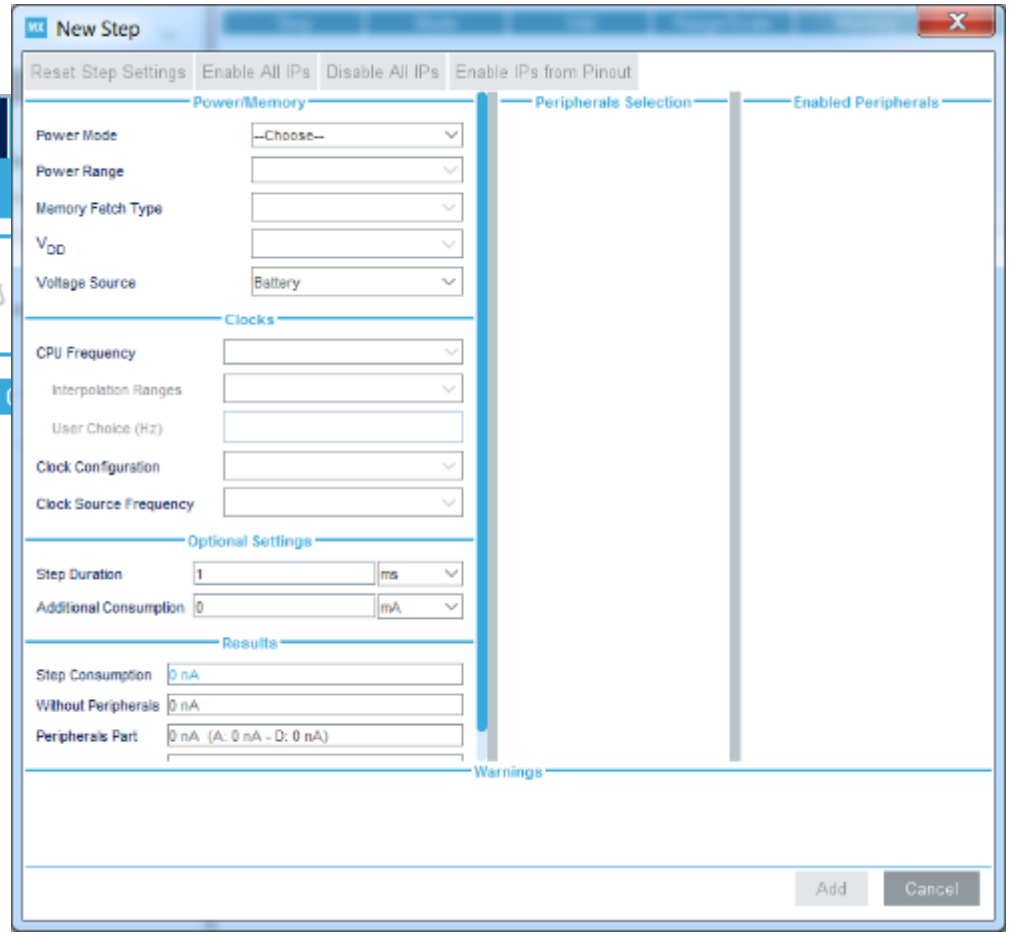
adding new step

- Click on “New Step” to add a new working phase within application work flow. Usually the first one is RUN mode as it is necessary to configure all of the peripherals after power on





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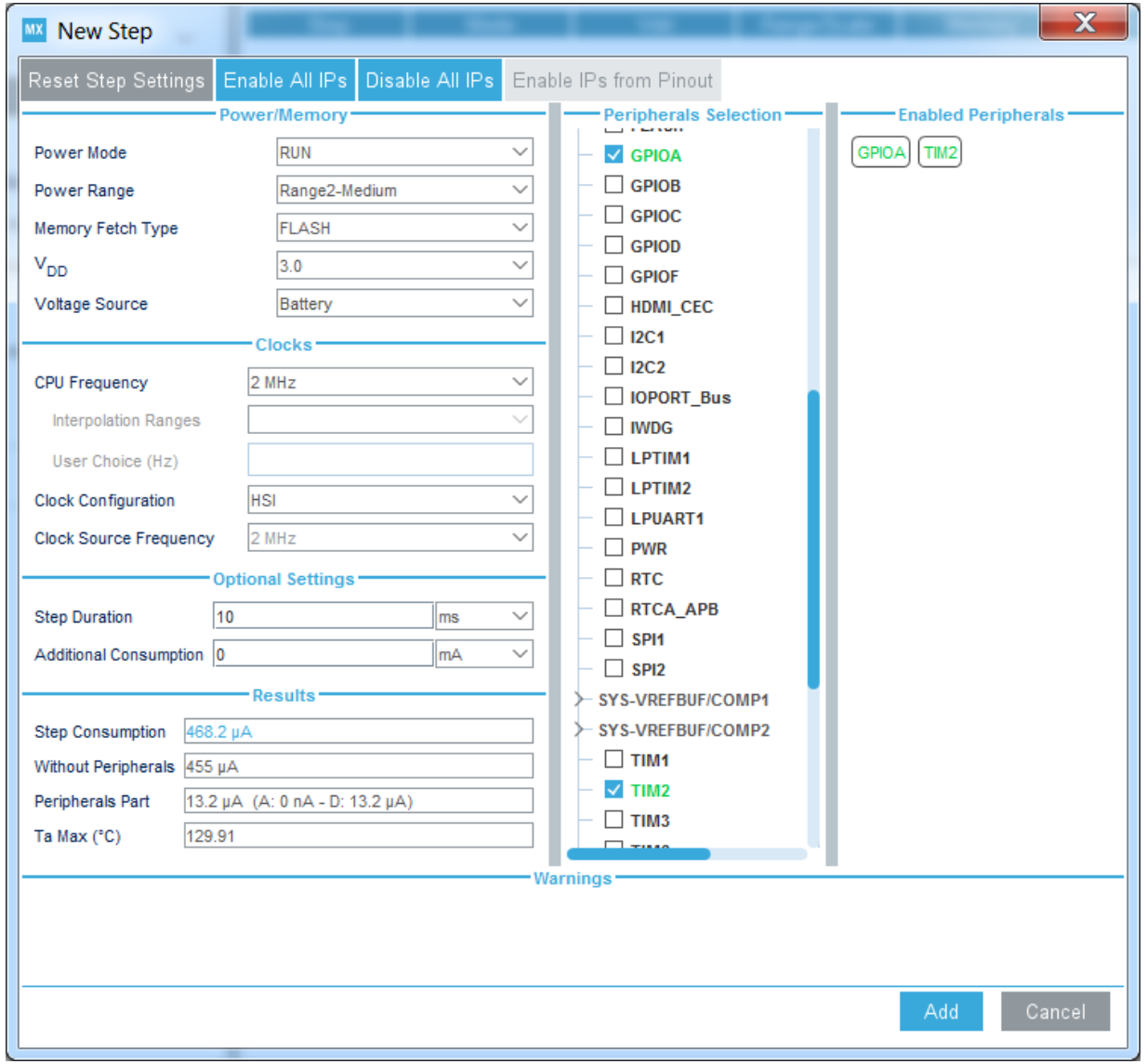
configuration of the step

- Within selected mode it is necessary to specify:
  - power and clock options
  - active peripherals (we can enable/disable all or do a selection based on already done configuration within pinout tab)
  - An additional current consumption (outside MCU – if any)
  - Step duration



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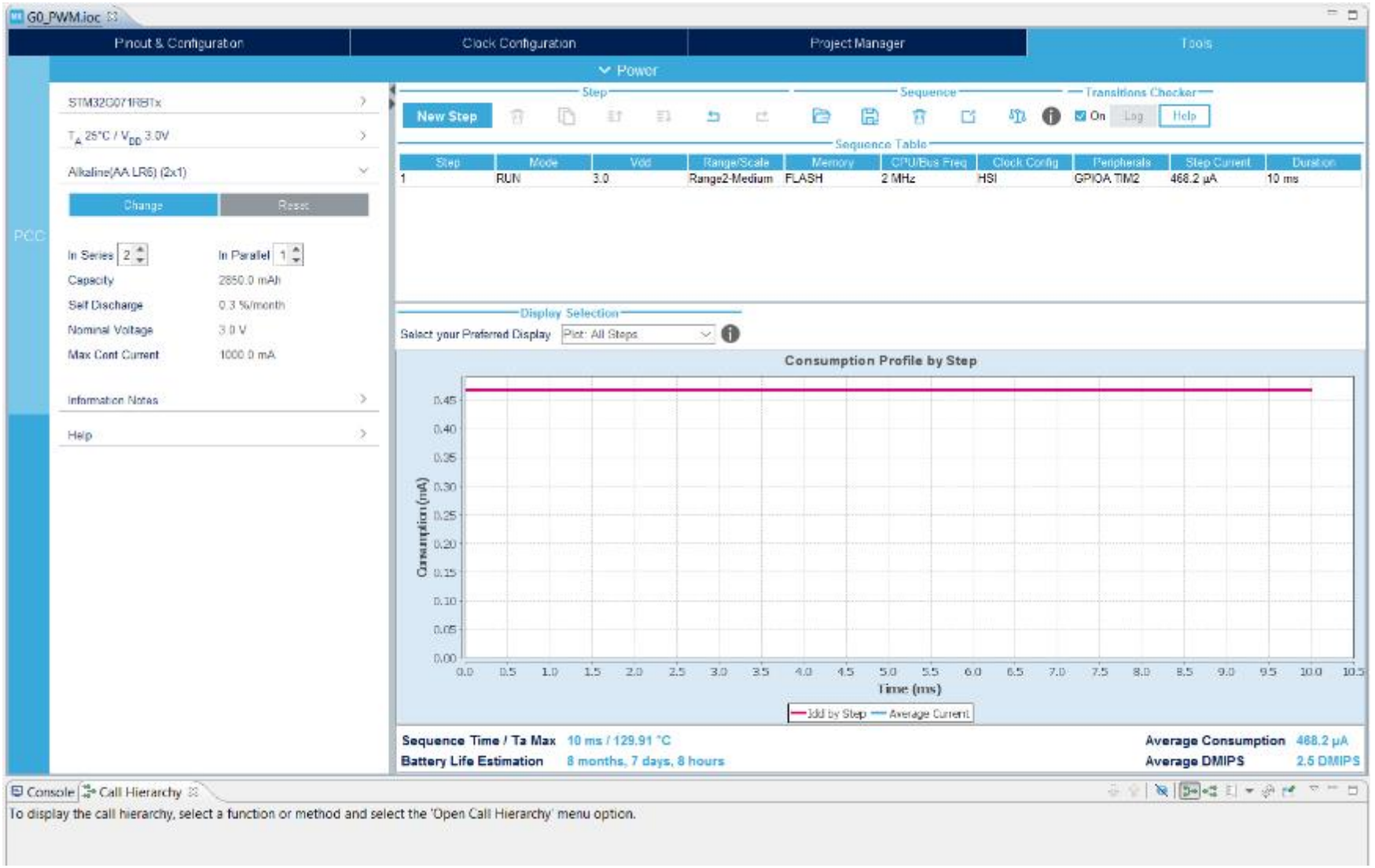
consumption profile update

- After adding a new step, there is an automatic update of the consumption profile with: graphical view by step and total, sequence time, battery life estimation, average and step current consumption

- Now we can add a new step



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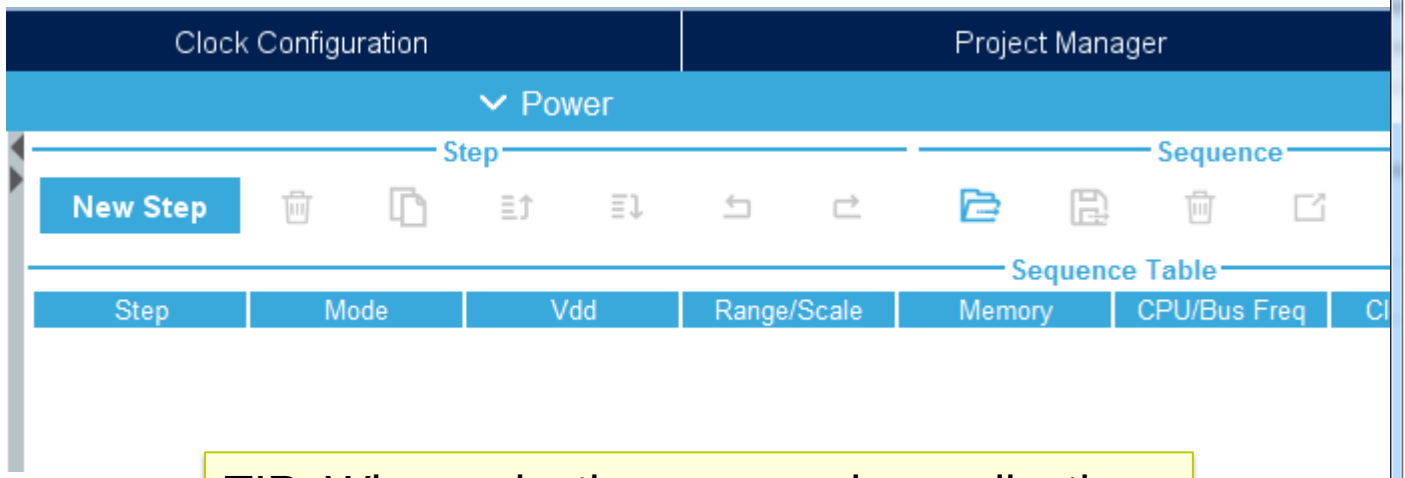
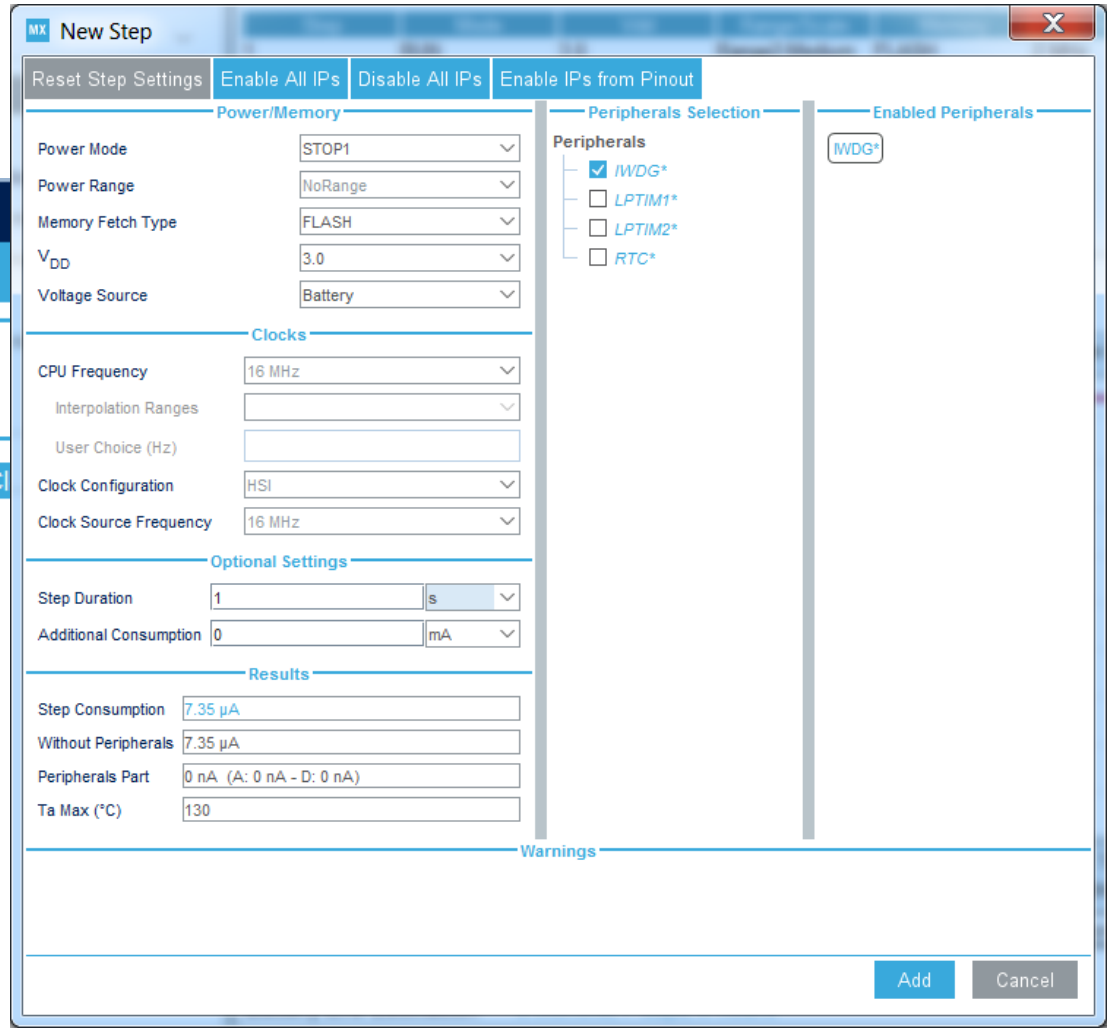
adding new low power mode step

- Click on “New Step” to add a new working step. This time it would be low power mode (STOP1)





TIP: When selecting new mode, application is displaying only valid modes and in case of low power->RUN sequence a wakeup phase is added

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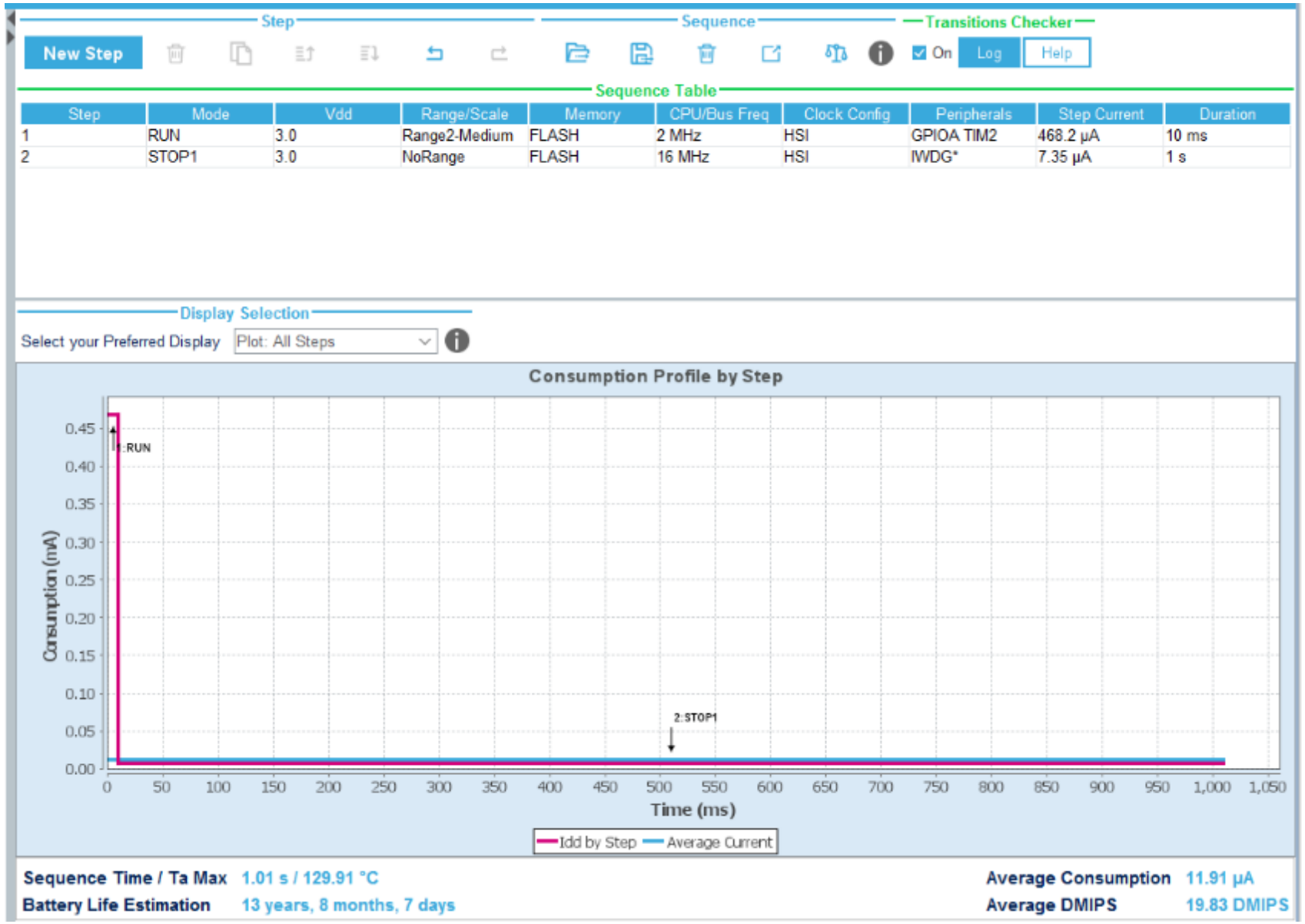
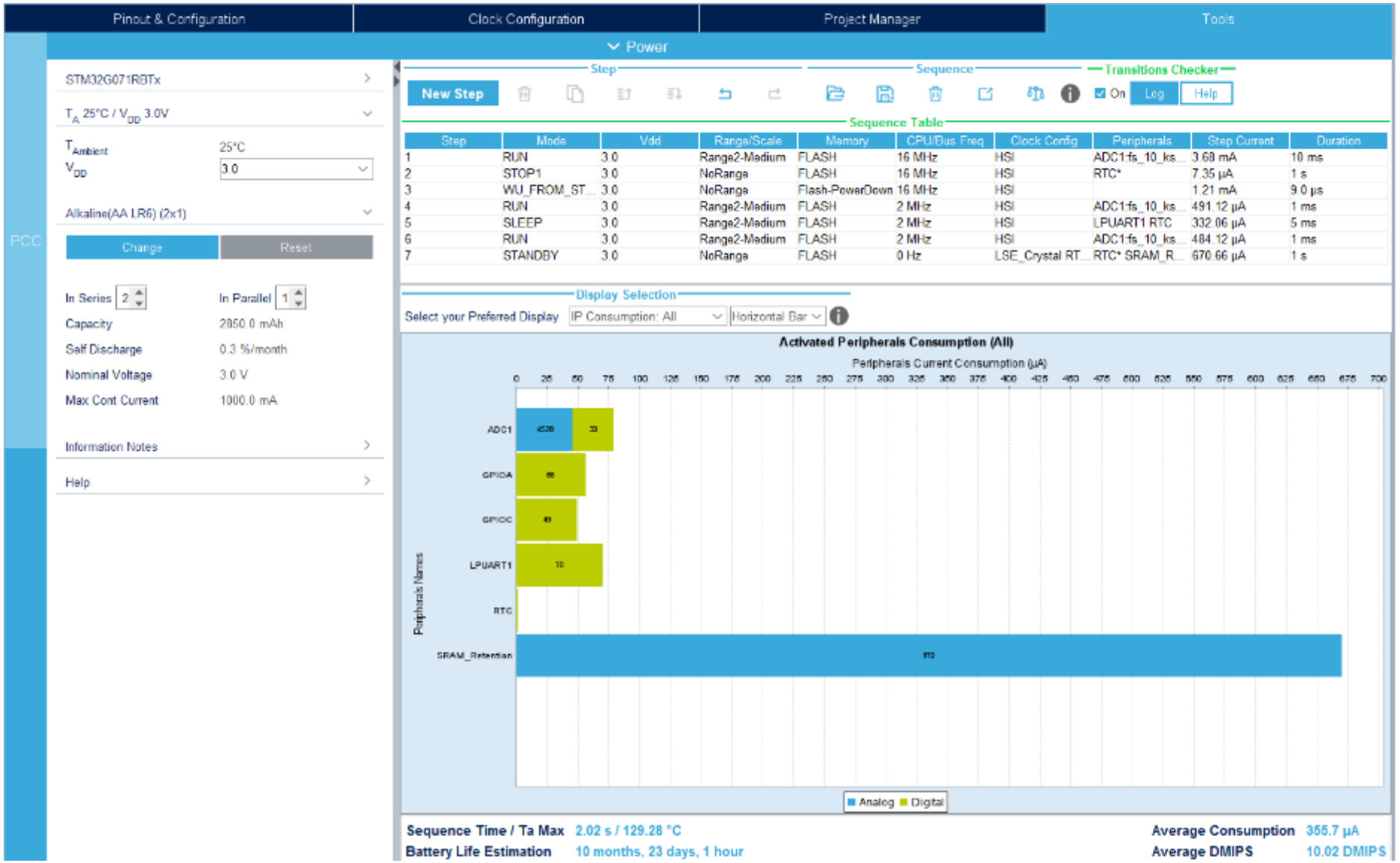
- After adding a new step a consumption profile is updated and we can either add a new step, change steps order, change display view



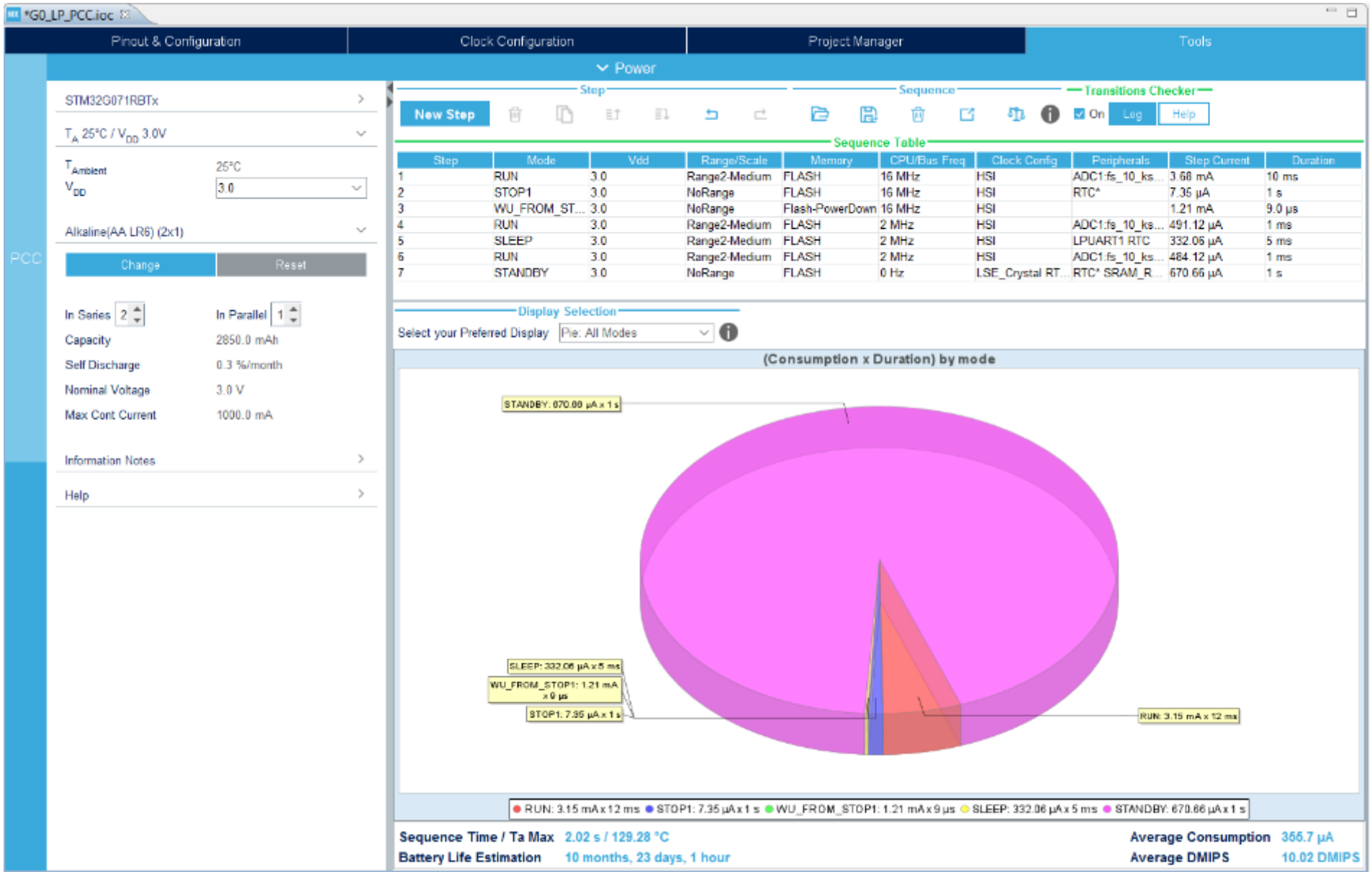
PCC – demo

- More complex scheme with different current consumption view (split on analog and digital parts)



PCC – demo

- Another view of current consumption profile



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Thank you

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